LIBRARY RESOURCES & TECHNICAL SERVICES

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Editorial: An Editor's New Year's Resolutions

Each year people look back on the past and resolve to do things that will make the new year more positive, productive, and meaningful. As your editor, I have some resolutions, too, although I hope that, by making them public, I won't be held to them any longer than most—say an issue or two.

RESOLVED: To shake articles about the reproduction and preservation of library materials out of the trees. It seems authors in these areas are so busy working that they rarely take time to write about it, or, if they do write, they send their output to specialized periodicals. Please write more, and think of *LRTS* when you do.

RESOLVED: To simplify text and citation formatting for *LRTS*, perhaps by getting someone to design a program package for authors to use in preparing their papers for submission. This software would take authors' files and double-space everything, indent paragraphs, center section headings, etc., and put all citations into *LRTS* house style. Incidentally, it will create title pages, add abstracts, and delete any identification of the authors from the pages of their texts to assist in anonymous refereeing.

RESOLVED: To continue experimenting with new features that furnish readers with useful and important information and opportunities to assess ideas and issues. Two features currently under consideration include a resources and technical services history column and a resources and technical services standards column. Suggestions for other columns are welcome, too.

RESOLVED: To slow down my knee-jerk reactions to events over which I have no control (such as the formation of RASD's CODES) and to take a more sanguine view of professional progress.

RESOLVED: To involve more people in the production of *LRTS*. Many people, as a glance at our masthead and the "Partial List of Referees" (elsewhere in this issue) show, contribute to the production of this journal. Authors, columnists, and advertisers do, too. Our combined talents and efforts make *LRTS* what it is. We relish the idea of expanding that pool of talent, intellect, and energy to bring you an ever more enjoyable and valuable *LRTS*.

RESOLVED: To speed the appearance of many valuable articles now in the publication queue by adding pages as our finances permit. This is the biggest challenge ahead in 1989. We want to bring you the most information we can cram between our covers attractively, in as timely a manner as possible. The enormous strides made by the division in 1988 in overcoming the deficit and moving into a healthy financial status (see Marion Reid's division annual report, elsewhere in this issue) should mean a splendid new year for each and every RTSD member through all our activities—conference, programming, and publications. This editor is pledged to help maximize the effectiveness of *LRTS* to all our members and nonmember readers.—*Sheila S. Intner, Editor.*

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Interaction: Letters to the Editor

From Irene L. Schubert, Library of Congress:

This letter is in response to the article by Roxanne Sellberg, "The Teaching of Cataloging in U.S. Library Schools," (32, no.1:30–42). . . .

I would like to add my concerns regarding the impact of less instruction in cataloging on future reference librarians. There are fewer graduates who aspire to be reference librarians who have an adequate understanding of catalog records because of a lack of substantive instruction in cataloging in library schools. They too often have no or an incomplete understanding of the construction of bibliographic records, which, as Sellberg acknowledges, are becoming more complex. Furthermore, they lack an understanding of the relationship and importance of cataloging to their career specialties. . . .

The assumption on the part of library schools that only catalogers need to understand cataloging and classification is to be deplored.

From Dennis Stephens, University of Alaska, Fairbanks: (copy of a letter addressed to Gail A. Schlachter, president-elect, RASD.)

I've been involved in acquisitions and collection development as a member of RTSD for over 15 years. When I received my ALA annual renewal notice and saw that RASD had established a collection development and evaluation section I was puzzled, since this area of librarianship had from all appearances nested comfortably in RTSD.

It rankled a bit that I had to join a new division, but I signed up with RASD, thinking there must be a reasonable explanation for this. . . .

I've not come across any information that justifies this duplication across division lines. The one issue of *RQ* I've received was not helpful. The January/March *RASD Update* mentioned the section's organizing plans and included draft bylaws including the statement that the section would "represent the interests of Reference and Adult Service Division members working in collection development and evaluation," and "maintain liaison with existing ALA units which have related concerns."

RTSD's responsibilities, as shown in the *ALA Handbook of Organization*, include "development and coordination of the country's library resources; and those areas of selection and evaluation involved in the acquisition of library materials and pertinent to the development of library resources."

Further, "RTSD has specific responsibility for . . . Synthesis of activities of all units within the ALA that have a bearing on the type of activity represented."

As Intner wrote in her editorial, "Save us from believing we discovered a great new invention—the wheel. . . ."

Editor's reply:
Right on!

From Susan Davis, State University of New York at Buffalo:
In her review of *Serial Connections: People, Information, Communication*, Gail McMillan mentions a report on Mary Elizabeth Clack's presentation about serials education. To set the record straight, I gave the presentation on serials education; Clack wrote the summary of our discussion for publication. . . .

Editor's reply:
Thank you for the correction. Published reports are not always clear, seeming to be written by the speakers themselves.

From Michael Gorman, California State University, Fresno:
I was surprised to read the following in Janet Swan Hill's otherwise excellent survey of the year's work in descriptive cataloguing (32, no. 3:208):

> The Illinois model [of academic library organization] was instituted by Hugh Atkinson for financial and philosophical reasons, but it has not been widely emulated, and there are intimations that it has not been an unqualified success. It will be interesting to see whether or how the organization will change under a new library administration.

. . . no citations are given for these assertions.

The organizational model was adopted by the UIUC Library faculty under the inspired (and much missed) leadership of the late Hugh Atkinson; it was not "instituted" by him. That faculty is, as far as I am aware, still largely in support of the organizational model.

Is there any evidence that the model has not been widely emulated? . . .

What, and from whence, are these "intimations" of failure? If Swan Hill can document such a statement, she should have done so. If she cannot, she should have omitted speculation and/or gossip from an article that is objective or nothing.

The UIUC Library does not have a "new library administration." It has a new university librarian. In studying, writing about, or working in a library with a developed faculty model, such a distinction is crucial to the understanding of its internal dynamics.

Janet Swan Hill replies:
I am surprised to have excited such distress by my paragraph on the UIUC model of academic library administration, particularly when I had taken pains not to express an opinion about its virtues. Gorman's objections to two sentences seem to fall into three categories: philosophical, semantic, and procedural.

Philosophical: Gorman posits that a "Year's Work" article should omit speculation or it "is . . . nothing." I disagree: the organization of information, drawing of conclusions, and speculation on the future are what distinguish a review article from an annotated bibliography. Since the whole of my paper, which Gorman terms an "otherwise excellent survey," is sprinkled with opinion, conclusions, and speculations, it would appear that he does not in fact oppose speculation *per se*, but rather this one in particular.

Semantic: Catalogers are trained to make fine distinctions in interpretation of language, and Gorman, as demonstrated by his editorship of *AACR2*, is an acknowledged master of fine distinction. I am confident that his description of how the Illinois administrative model was instituted is correct, and I agree that a new library director does not an entirely new administrative structure make. On the other hand, library directors are commonly credited with "instituting" programs implemented during their tenure, regardless of how widely supported the moves were, and the period of time during which a person serves as chief administrator of an institution is commonly called her/his "administration." I readily acknowledge Gorman's precision on these points, but see them as "distinctions without a difference" in the limited context of the paragraph under discussion.

Procedural: (1) It is difficult to cite an absence of information, yet the absence itself can be significant—just ask Sherlock Holmes. Few people write about why their libraries haven't reorganized, and there are not many published reports from libraries that have. I too know of libraries that have adopted something like the UIUC model, but their numbers are as yet small enough that it is accurate to say that the model has "not been widely emulated." (2) Chronological coverage limitations led me to exclude citing some sources such as (ARL/OMS) *Automation and Reorganization of Technical and Public Services*, SPEC kit 112 . . . and my own citation-laden "Staffing Technical Services in 1995" in *Library Management and Technical Services* (ed. by Jennifer Cargill, Haworth 1988), which had not yet been published. (3) Characterizing something as "not . . . an unqualified success" is very far from terming it a "failure." Had I said that the more traditional library organization pattern is not an unqualified success (equally true), I doubt that Gorman would have read the statement as censure. In this case, Gorman may have allowed his espousal of UIUC's organizational structure to color his reading of my text. Having said this, I note that my own reading and hearing of papers and participation in discussions in the years since UIUC began its reorganization have doubtless influenced my interpretation of the articles cited, where praise seems subdued, and where phrases such as "the training program can fairly be described as a qualified success" (see Arnold S. Wajenberg "Cataloging Instruction for Public Service Librarians," *Cataloging & Classification Quarterly* 8, no.1:119) are used.

. . . When the UIUC model of organization becomes a common, even ordinary pattern among academic libraries, Gorman can take pleasure in referring to the first of the two sentences contested, and declaim, "not THEN, perhaps, but SOON THEREAFTER!"

From Norman Horrocks, Scarecrow Press: (copy of a letter addressed to Richard D. Johnson.)

Thank you for the review of *The Librarian's Helper* (32, no.3:272–3). Two comments: (1) the name of the lead author is misspelled and should read Jennifer Pritchett, and (2) the review was of the 1986 Version 4.0. The 1988 Version 5.0 now in preparation does respond to both of Schwartz' criticisms in that instructions are now included for installation to a hard disk and the indexing for the documentation has been much strengthened.

Editor's reply:

Thus spake the user! We are happy to note that Scarecrow Press pays attention to criticisms from the field and look forward to seeing version 5.0 when it is in distribution.

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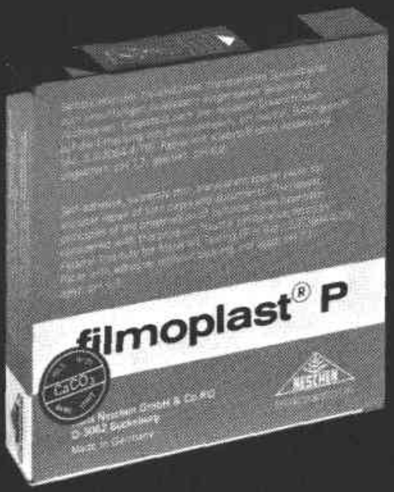

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The North American Collections Inventory Project: Implications for the Future of Coordinated Management of Research Collections

David Farrell and Jutta Reed-Scott

The Association of Research Libraries, working with the Research Libraries Group, Inc., began the North American Collections Inventory Project in July 1983 as a cooperative effort to develop an online inventory of research library collections. During the years between 1983 and 1988, participation in the project has steadily increased. These years mark the passage through a crucial stage: development of tools and resources and establishment of the general requirements, policies, and procedures governing participation. They also set the stage for developing new strategies to strengthen North American research resources and for shaping future directions. This progress report looks at what was accomplished and explores the essential implications for the future of coordinated management of research collections.

The origins of the North American Collections Inventory Project (NCIP) can be traced to the increasing complexity of managing research collections beginning in the late 1970s. Academic and research libraries were confronting major challenges in building, maintaining, organizing, and preserving scholarly resources. The proliferation of publications, the development of new technologies, the decreased purchasing power of the dollar, and the accelerated changes in educational programs had diminished the capacity of individual research libraries to provide adequately for the expanding information needs of scholars, faculty, and students. The tasks of preserving millions of brittle research materials and of providing access to materials through the creation of machine-readable cataloging had also become urgent needs. Widespread agreement developed that the

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David Farrell is Associate Dean, Collection Management, at Indiana University Libraries. Jutta Reed-Scott is Collection Development Specialist, Association of Research Libraries, Washington, D.C.

The authors wish to express their appreciation to Shirley Echelman, Executive Director, ARL; Jeffrey J. Gardner, Associate Director, ARL Office of Management Studies; and Mary Jane Starr, CARL Conspectus Coordinator, National Library of Canada.

research library community must take steps to coordinate local collection management (i.e., selection and acquisitions of and provision of access to, materials) and preservation activities within a national (and international) cooperative framework.

But charting a course of action depended on finding answers to the questions, Who collects what? How strong are the collections? and What is the current collecting policy? A reliable inventory of collections based on a national standard appeared to be a useful approach to answering these questions. The RLG Conspectus—a standardized methodology for collection assessment comparison—offered a means by which this could be accomplished.

The conspectus builds on a long history of efforts to develop an inventory of research collections. Important antecedents were the efforts that started in the 1970s in the collection development committees of the ALA Resources and Technical Services Division. Another significant model was the collection evaluation project at Columbia University. But it was the Collection Management and Development Committee of the Research Libraries Group, Inc. (RLG), that played a catalytic role and guided, in 1979, the initial design of the conspectus. Gwinn and Mosher described RLG's efforts to develop this tool for "mapping collection strengths," and as described therein, the conspectus provides a standardized procedure and terminology for sharing detailed descriptions of research collections.[1] Using the Library of Congress classification scheme (LCC) as a structure, librarians apply numerical codes to identify six levels of collection strength and alphabetical codes to describe language coverage. The detailed descriptions of collection strengths and weaknesses of participating libraries are available through an online database—the Conspectus Online—and in offline products.

Of equal importance to the development of the North American inventory were initiatives of the Association of Research Libraries (ARL). In 1981, ARL's Task Force on Collection Development began considering ways to encourage and support a national effort for coordination and cooperation in collection development. The result was a proposal that ARL's membership extend the conspectus approach to other major research libraries.

To test the feasibility of expanding the RLG inventory, in 1981 the task force initiated a pilot project in five ARL libraries that were not RLG members: Cincinnati, Notre Dame, Manitoba, Iowa State, and Wisconsin. The five libraries completed collection assessments for three conspectus divisions and demonstrated that the RLG Conspectus could be an effective framework for analyzing collections on a national scale. The test also revealed difficulties in the methodology: some were due to the developmental nature of the conspectus and some were due to the expansion of the project beyond RLG's confines and structure. Some of these difficulties continue to vex librarians today, including the limitations of LCC for describing collections in the sciences and interdisciplinary fields; the concern about the subjectivity of collection assessments and the lack of a quantifiable approach; and the difficulties of defining the "universe" of publications.

To address these problems, it was decided to develop additional documentation and training resources. In addition, revision and completion of conspectus work sheets was seen as critical to the success of the project.

These activities culminated in February 1983 with the ARL Board of Directors' decision to endorse a three-phase implementation plan for the National Collections Inventory Project (later designated "North American" to recognize the participation of ARL's Canadian members) or NCIP.[2]

The thrusts of the plan are a series of interrelated activities as follows:

Phase 1, July–December 1983
- Develop detailed technical and process manuals.
- Design training program and other resources for bibliographers.

Phase 2, January–December 1984
- Field test the manual at three ARL libraries.
- Field test training materials.
- Revise project materials on basis of experience.

Phase 3, July 1985–July 1988
- Select and train fifteen collection development librarians as NCIP consultants.
- Develop a conspectus materials distribution center.
- Promote uses of NCIP data for cooperative programs.

As the cornerstone of a North American cooperative effort, NCIP's long-term goal is to develop an online inventory of research collections that will strengthen coordinated management of research collections and help to determine shared responsibilities for these vital resources.

DEVELOPMENTAL PHASE: JULY-DECEMBER 1983

ARL's Office of Management Studies (OMS), with RLG's cooperation, began NCIP Phase 1 in July 1983 and appointed the joint ARL-RLG NCIP Advisory Committee. Funded by the Council on Library Resources, OMS staff developed training tools and other resources during the latter half of 1983. This included the preparation of a detailed, technical procedural manual that describes the history, development, and application of the conspectus methodology.[3] OMS also designed an orientation and training program for participants. The program introduces the conspectus instrument and methodology, offers practical advice and experience in completing sample sections of the conspectus, and, above all, provides an opportunity for participants to develop a common understanding of the materials and approach and to discuss issues and concerns relating to collection management and cooperation.

TEST PHASE: 1984

The Office of Management Studies carried out Phase 2 in 1984 with funding from the Lilly Endowment and additional support from three ARL test libraries. The intent of the second phase was to test, develop, and refine the tools and resources developed in Phase 1 before introducing them to the members of ARL who would participate. The three ARL libraries were Indiana University (a large, public institution with a full range of graduate and professional programs and library collections of 4 million volumes managed by thirty-six specialists); the University of Notre Dame (a private Catholic institution with a more limited range of programs and library collections of 1.5 million volumes managed by three full-time bibliographers and fifteen part-time librarians); and Purdue University (a public land grant institution with strong programs in science, technology, and agriculture and library collections of 1.5 million volumes managed by twenty-five librarians with collection development responsibilities). These libraries provided an opportunity not only to test the manual and training resources but to test approaches to statewide coordination in a diverse environment. Finally, the planners assumed that the NCIP inventory would hold interest for non-ARL libraries with significant research collections. Accordingly, another objective of this phase was to develop a methodology for identifying such collections.[4]

Phase 2 contributed to the developing national effort by testing and revising the technical and procedural manual and training program and furnishing practical experience in learning a standard methodology for collection assessment and applying the results to decisions for cooperative collection development.

Phase 2 also played a critical role in determining the relationship between ARL and RLG in regard to conspectus development and participation. The organizations signed an agreement defining ownership, use of, and access to conspectus data; management of the database; and pricing. Another section of the agreement clarified governance of the conspectus development process. Since 1983, non-RLG NCIP librarians have participated in the development of the conspectus through representation on the RLG Task Force on Conspectus Analysis, which is responsible for developing the conspectus and its associated tools. As a result, close cooperation between ARL and RLG has developed. Building and improving the conspectus became a cooperative endeavor.

TRANSITION

The years 1984 and 1985 marked the transition to full-scale implementation of NCIP. ARL libraries in California and in the Southeast began collection inventories using NCIP conspectus methodology, and their experience contributed to further refinement of the project. An important lesson learned was the need for organizational support to assist bibliographers in the local library and to advance cooperative efforts. Another finding was the need for continued development and modification of the conspectus.

Early in 1984, the University of California (UC) Libraries developed a two-phased plan for implementing NCIP. Seven UC libraries that had not already completed the conspectus (Irvine, Los Angeles, Riverside, San Diego, San Francisco, Santa Barbara and Santa Cruz) selected three conspectus subject divisions for coordinated completion for the first phase and five for the second phase. (Berkeley and Davis, as RLG members, had previously completed the inventory.) Systemwide coordination of the project came under the general responsibility of the University's Collection Development Committee.

One useful innovation of the UC project was the appointment of systemwide teams for each conspectus division, which include one person from each campus participating in NCIP. The concept of teams was derived from the successful experience of UC's first phase in which selectors from various campuses gained much from working together. In addition to identifying common methodological approaches, the teams review work sheets and develop strategies for using conspectus data for cooperative collection management.[5]

A second regional effort began in fall 1984 when a consortium of southeastern ARL libraries endorsed participation in NCIP to advance cooperative collection development in the region. While several institutions completed one or more conspectus divisions, progress overall was limited by the lack of staff resources and the absence of effective organizational support for the effort. Participants concluded from this experience that successful cooperative activity requires strong local commitment by the collection development librarians and directors. Of equal importance are realistic project goals that are controlled to keep in step with local capabilities and that reflect shared understanding of costs and long-term benefits of cooperative collection management.

Early in 1986, library directors of the southeastern consortium took a hard look at the limited participation and refocused efforts to build a regional cooperative collection development program. Several Southeastern ARL libraries are proceeding with NCIP under a reorganization plan establishing smaller working groups by geographic proximity or common subject interests with a long-term schedule.

The results of these diverse projects led to further planning during 1984 and early 1985 for full-scale implementation of NCIP in Phase 3.

NCIP PHASE 3: 1985–88

By mid-1985, the groundwork was laid and the process of extending participation in NCIP began. This phase, funded by the Andrew W. Mellon Foundation, aimed to implement NCIP in research libraries throughout North America. Initial activities focused on developing trainers to work with bibliographers and selectors in libraries undertaking conspectus assessments. ARL Office of Management Studies' staff trained fifteen collection development librarians to provide assistance to libraries planning and organizing conspectus projects.[6] OMS also established a materials distribution center to make work sheets and other conspectus resources available to NCIP participants, and the first issue of *NCIP News,* a newsletter, appeared in January 1986 to carry information to participants and others interested in the conspectus process.[7]

In cooperation with RLG, work continued to complete the conspectus and to prepare additional tools. Two important refinements are supplementary guidelines and verification studies. Supplementary guidelines expand the standard collecting level definitions to provide subject-specific guidelines. Typically, they give an overview of the nature of the literature supporting a broad field, such as medicine or chemistry, and suggest appropriate standard guides, bibliographies, and periodical indexes together with "benchmarks" (percentages of holdings from these tools) that should be met at specific collecting levels.

While supplementary guidelines respond to the need for standardized collection assessment approaches and tools, verification studies are intended to test the accuracy of the assignment of collecting levels. Verification studies use specially designed, statistically valid lists of citations derived from the universe of titles within the specified test subject. Verification studies have been developed for many subjects, including English literature, Russian history and literature, baroque art and architecture, genetics, and chemistry.

Another initiative is the meetings at ALA for NCIP users. The NCIP Users Group, organized at the recommendation of the joint ARL-RLG NCIP Advisory Board, met for the first time at the 1987 ALA Midwinter Meeting and again at the Annual Conference that followed. The meetings provide an opportunity for current and potential users of NCIP to explore issues and share information.

As Phase 3 proceeded, more emphasis was given to testing and developing applications of the conspectus data, both locally and cooperatively. As a first step, in mid-1986 OMS surveyed the ARL membership to gather information on the level of participation and current uses.[8]

Responses submitted by eighty-three libraries indicated widespread present or planned participation in NCIP (85 percent). Equally important, the survey documented a wide array of local uses. Libraries reported that they used conspectus data to identify collection strengths and weaknesses (77 percent); to develop knowledge of collection development staff and to strengthen communication among colleagues (65 percent); to serve as the basis for collection development policies (58 percent); to support budget requests and budget allocation decisions (45 percent); to identify collection strengths and weaknesses in support of preservation decisions (43 percent); to inform faculty of library collecting policies and to assist them in locating strong collections in their research fields (43 percent); and to strengthen grant proposals (36 percent).

Perhaps most fundamentally, the responses revealed that the decision to participate in cooperative collection management within an existing or an ad hoc organizational structure is one of the key driving forces for libraries' participation or planned participation in NCIP.

CANADIAN CONSPECTUS PROJECT

The year 1985 also saw the start-up of the Canadian conspectus project. The National Library of Canada and the Canadian Association of Research Libraries (CARL) are working together to organize a Canadian inventory that will eventually include data for CARL members, non-CARL academic libraries, large public libraries, and special libraries throughout Canada. The CARL project, while national in scope, is regionally based for training and implementation.

Efforts centered initially on providing training to bibliographers. Four regional workshops were conducted in locations across Canada, including one program conducted in French. Building on U.S. participants' experience, CARL has paid considerable attention to providing organizational support for the project. One important step was appointing a CARL coordinator to assist librarians and to provide liaison between the National Library of Canada, CARL, and ARL. Another was establishing regional working groups to enhance communication and to lay the foundation for cooperative collection development programs utilizing the conspectus data.

To support the development of the Canadian inventory, adapting RLG and NCIP materials were necessary—including more detailed coverage in the conspectus for Canadian history, literature, and law—and drafting language codes that reflect the bilingual status of French and English in Canada. In addition, the NCIP manual and conspectus work sheets were translated into French.

The conspectus data for Canadian libraries will reside in a Canadian database; however, data for the fourteen ARL libraries in CARL will also be input into the Conspectus Online. While modeled on RLG's Conspectus Online, the Canadian inventory will have several important differences, including fully bilingual capability and enhanced searching, using a menu- or command-driven mode. The system was scheduled to be fully operational in the first quarter of 1987.[9]

PACIFIC NORTHWEST

The conspectus methodology has been adopted for several other cooperative collection development programs. The largest such effort is in the Pacific Northwest, where the programs of the Library and Information Resources for the Northwest (LIRN) project are supporting regionally coordinated collection management.[10] Currently, more than 240 libraries of all types in the states of Alaska, Idaho, Montana, Oregon, and Washington are participating in the LIRN project. By early 1987, assessments from 188 libraries had been entered in the Pacific Northwest Conspectus database.[11]

The cornerstone of LIRN's strategy is an adaptation of the conspectus approach to create an assessment methodology flexible enough for use by small and medium-sized libraries as well as large research institutions. A library in the Pacific Northwest may choose to assess collections for only 24 very broad subject divisions, for 600 more finely articulated divisions, for all 7,000 lines of the conspectus, or for a combination of these three approaches. The data collected during this regional assessment effort will be entered into the Pacific Northwest Conspectus database. LIRN also uses expanded collecting level codes originated by librarians in Alaska (a similar set of modified codes developed by librarians in Indiana has been endorsed by RLG for use assessing nonresearch collections).

CONSPECTUS IN EUROPE

A more recent development is the implementation of the conspectus approach in several European countries. The British Library already has reviewed its own collections within the conspectus framework and is exploring the feasibility of a United Kingdom conspectus. A consortium of eleven Scottish research libraries, including the National Library of Scotland, have embarked on a one-year conspectus project. Other European countries currently investigating the feasibility of using the conspectus or conducting pilot projects include the Netherlands, Sweden, and France.

NCIP RESULTS

The activities described thus far have traced the transition from planning to implementation as the RLG initiative expanded into a North American (and now European as well) collections inventory. While RLG's purpose was to foster collaboration in collection development, cataloging, and preservation of research resources among RLG member libraries, NCIP extended the process to the ARL membership as well as to Canadian and European libraries.

To build the international online inventory of research collections is a complex undertaking that will continue for many years. But the groundwork has been laid by RLG and ARL, and sufficient experience has accumulated to evaluate NCIP's initial results and benefits on the basis of its objectives.

The basic objectives of NCIP were identified in the plan developed by the ARL Task Force on Collection Development in 1983. The following eight "rationales" endorsed then by the ARL Board of Directors are the basis for the authors' evaluation.

1. To describe the current and changing configuration of collection strengths in North American libraries (with the potential to expand internationally), contributing to the assurance of national coverage and the identification of lacunae.

In the broadest sense, this goal is well along the road to achievement. According to the 1986 ARL survey, 85 percent of the membership, including the major Canadian research libraries, is participating in NCIP or plans to in the near future.

Adoption of the project by CARL and the work of the National Library all but assured that NCIP's impact will be felt in libraries at all levels throughout Canada. Moreover, the expansion to Europe is already underway. For the first time, research collection strengths are being described so that libraries can consider local collecting patterns within a continental (and eventually international) framework.

2. To serve as the basis for cooperative collection development programs and for distribution of responsibility for collecting, cataloging, and preserving materials, both nationally and regionally.

The progress of NCIP described elsewhere indicates a basis for cooperative collection management locally, regionally, and nationally, although the results have been uneven. NCIP has enhanced national cooperative efforts by introducing collection development librarians throughout the country to a standard methodology for inventorying and evaluating their collections.

NCIP has also played an important role in advancing cooperative collection management efforts on a regional basis. A case in point is the use of conspectus data in strengthening systemwide coordination among the University of California Libraries.[12] A key component of this program is the involvement of subject selectors from individual campuses in reviewing composite data and determining coordinated policies. Another case involves the Music Library Association, who, together with members of RLG's Music Program Committee, developed the music division of the conspectus. This division includes a complete subject-by-subject line shelflist measurement, and planning is underway to utilize the OCLC database.

Time alone will tell whether the conspectus can be more than a basis, a starting point, for a broad-based cooperative effort in all aspects of collection management. Such a basis clearly is needed. Where commitment to cooperation exists already, the conspectus has supported and shaped cooperative selection, priority setting, retrospective conversion, and preservation activities.[13] Where no such underlying commitment exists, the tool itself cannot create it.

The question remains why the national cooperative environment doesn't appear to have been greatly improved by implementation of NCIP. A national cooperative policy is difficult to implement because it requires that collection development librarians, working in diverse environments and in many cases without the support of the faculty, substantially change their ways of thinking and working and that leaders and administrators pursue collective goals in place of local ones. Progress in this arena has not been dramatic because libraries have more pressing local concerns and allegiances. Yet, as described earlier, statewide and regional cooperative collection management programs in California, Indiana, and the Pacific Northwest have benefited from NCIP. On a fundamental level, the informal impact of NCIP may be the most important. For participating librarians, the project affords the opportunity to work with bibliographers at other institutions and to create a web of informal, ad hoc agreements that are the essential conditions for coordinated collection management programs.

3. To serve as an interlibrary loan and public service referral tool, both nationally and regionally.

While many believe the conspectus has potential as a public service tool, several factors have tended to limit use of conspectus data in this capacity. First, the conspectus was conceived and began as a tool for collection development librarians with minimal involvement of public services staff in the design and development. Equally important, the conspectus does not give item-level information, and the rapidly expanding bibliographic networks are better sources for known-item searches. Other reasons are the limited participation by the research library community and the unavailability of data for specialized collections. A final reason was the difficulty of searching the Conspectus Online, but recent searching enhancements, especially keyword searching, will provide more user-friendly access. There are important public service functions the conspectus can support. One is to guide students, faculty, or researchers to important collections at other institutions. Another is to provide information concerning collection intensity in their field at a specific institution. Still another is to point interlibrary loan requests, which could not be treated in the bibliographic tools or network, toward a library reporting significant strength in the subject of the request.

While there are practical difficulties to overcome, it appears that this rationale has not been properly tested. Ways must be found to publicize the potential of the conspectus for reference services and to provide educational tools to public service librarians.

4. To provide a consistent tool for the development of institutional collection development policies.

The most successful application of the conspectus has been on the local level, and, as the 1986 ARL survey demonstrates, the conspectus—both as an analytical tool and a methodology for learning effective standard collection assessment practices—has stimulated the drafting of collection development policies in a number of libraries, including Brown University, Dartmouth College, Indiana University, the University of Oklahoma, University of Virginia, and UC–Berkeley. Librarians in these institutions discovered that, once the conspectus assessments were completed, a major part of their local policy had been drafted.

A corollary benefit is the closer analysis of the distribution of collection management responsibilities among different library units. In multiunit library systems the conspectus data provide a composite map of collecting patterns within the library system. Several institutions have found that conspectus assessments not only aid in understanding how collections in the main library relate to those in departmental or branch libraries but also identify areas of overlapping collection responsibilities. The conspectus can help look more closely at the institution's collection management program, resolve conflicting policies, and coordinate local collection activities more effectively.

Of equal importance to local collection management programs is the use of the conspectus (or collection policies based on it) for training staff members. Because the methodology produces a report of the relative strengths of the subfields of a subject collection, relative strengths of the retrospective and the current collections, and relative strengths among institutions, the conspectus assessments, combined with the discussions among subject specialists and with the collection development officer in an institution, provide a sound basis for training new collection development librarians. For more experienced librarians, the conspectus apparatus provides a solid foundation for comparable and verifiable collection evaluation. The same data provide information for a librarian speaking to those outside the library about collection strengths and priorities.

5. Serve as communication device for indicating changes in collection development policies, locally, regionally, and nationally, and provide the capability to monitor North American collection development.

Concerning the objective of developing the conspectus as a tool for communicating with teaching faculty, administrators, and outside funding agencies, it has demonstrated its usefulness. By presenting standardized, comparative values, the conspectus provides a systematic basis for comparing collection strengths and priorities (and matching those priorities with priorities for research and instructional units supported by the collections). Uses in this category are reported from librarians who work closely with faculty in selection, with administrators and others who provide funds, and with committees involved in formal review (including accreditation) processes.

6. To provide the capability to link collection policy to processing and

preservation priorities, institutionally as well as by region or nationally.

During 1986 special efforts focused on the use of conspectus data for identification of preservation needs and priorities. One important model for cooperative presentation decision making was outlined by Atkinson in a paper presented at a national meeting of preservation specialists in 1985. Atkinson proposed that a large-scale cooperative preservation program would be built around strong research collections in different libraries. In this program for each subject area, a research collection would be identified that would serve as the collection of record and would be preserved by the cooperating library.[14]

On the local level, a conspectus-based approach to preservation planning was used at the Yale University Library where reviewing of collections provided the starting point for establishing preservation priorities. Walker, of Yale's Preservation Department, noted that "the Conspectus helped us immensely; it gave us a starting point and a direction, and it was a tool for supporting and justifying preservation planning in subject areas."[15]

7. To provide information for determination of national, regional, and local needs in relation to possible fund-raising activities.

Conspectus values are now cited by librarians (to indicate preponderant strength that must be maintained or debilitating weakness that must be strengthened) in budget requests to local administrators and have begun appearing as part of the rationale in collection development, retrospective conversion, and preservation grant proposals. As more libraries complete the assessments, it is likely that more use of the data will occur in seeking and budgeting funds, especially since funding authorities increasingly request objective, comparative data on peer institutions and collections.

8. To stimulate changes in the way librarians and their users think about cooperation.

Perhaps in this area the conspectus and NCIP have had the greatest impact, and the results have been most problematical and most promising.

The compilation of the inventory (and the implied commitment to cooperation) and the introduction of a standard approach to collection assessment and management motivated collection development librarians—who are accustomed to think locally, not globally; who have lacked a standard that encourages interinstitutional comparisons—to think in new ways about their work. A cooperative spirit, where it existed, has been enhanced, and several coordinated efforts directly followed NCIP implementation. The conspectus does not provide all the answers (indeed, too much has been expected of it), but it has provided a uniform foundation and it has held up the appealing vision of a common language of collection assessment and a rudimentary first description of the national research collection.

OBSTACLES AND CHALLENGES

Although many collection development librarians have found the process of making conspectus assessments a valuable experience in and of itself, not surprisingly they have encountered some obstacles along the way.[16] These center on three areas: the incomplete conspectus apparatus, methodological concerns, and the assessment approach.

A major difficulty throughout the NCIP process has been the incompleteness of the conspectus apparatus. The conspectus has about 7,000 subject descriptors, but three LC schedules (A, U, and V) have not been completed. Moreover, several major divisions drafted early in the development of the conspectus history, sociology, economics, political science—are undergoing extensive revision. The supplemental guidelines, too, have developed slowly. They are essential to the establishment of a uniform approach to applying the assessment values and are particularly needed by librarians new to the conspectus. One problem, of course, was the lack of librarians sufficiently experienced in conspectus work to draft or review a division or its supplemental guidelines. With more librarians participating in the work, it is expected that the basic apparatus will be completed more rapidly.

While problems relating to conspectus documentation are temporary, more persistent difficulties with the conspectus center on methodological issues: Is the LC classification schedule's alphanumeric scheme and subject descriptor terminology adequate for the purpose? How objective are participants' judgments?[17] In addition, information on who uses the conspectus, how it is used, and how often is scanty, even from the RLG institutions that conceived it and applied it for the longest time.

All librarians working with the conspectus have encountered problems relating to structure and limitations of the Library of Congress classification system. Some problems relate to the specific breakdown of the LC classification, which may appear too broad or too detailed when applied to an individual collection. Other problems result from treatment of specific subjects that are either inadequately represented or scattered among different sections of the classification. Cases in point are special collections (nonprint formats, rare books, realia, etc.) and multidisciplinary collections (area studies, women's studies, etc.).

No single, perfect scheme exists, and the LC classification is one of the "most widely recognized standards nationally."[18] Nevertheless, its awkwardness in the conspectus leaves some librarians floundering.

Librarians experience difficulty using the conspectus approach to collection assessment. Unlike previous collection development policies, the conspectus requires them to think in a new way. First, they must describe their collections in terms of the "universe" of publications and scholarly information; secondly, they must assess their collections in the context of a common standard, using newly developed symbols and definitions. The process of assigning a "universal standard" is radical because it is at odds with the cherished concept that every collection is unique and exists unto itself for a special local population; it is hard work to assume a global view and assign a standard value unless one has experience, confidence, and objective data; and there is an obvious implication that the results may require changing collection priorities and responsibilities.

The most critical challenge is to develop strategies to foster coordination and cooperation in collection management and preservation. The process of developing the tool for decision making is essentially completed. The work of building on the structure of the conspectus is only beginning.

Discussion at the special program on NCIP at the October 1986 ARL membership meeting underscored the complexity of achieving collaboration in building, maintaining, and preserving research collections on the national level. As Abell noted, "we need to recognize that the research library community is not now, nor likely ever to be, moving in orderly ranks across a broad front of issues in collection development, preservation, and access."[19] Most participants at the ARL meeting agreed that the conspectus has sharpened the understanding of the issues and problems of coordinated collection development. But it is clear that the conspectus cannot resolve the complex and difficult political and economic issues of distributed collection responsibilities.

CONCLUSION

As the conspectus has grown from an instrument developed within RLG to a North American and now international inventory of research collections, it has successfully integrated different perspectives and served divergent needs. This success has depended on the participation and commitment of many individual librarians who developed work sheets, revised existing divisions, drafted supplementary guidelines, and prepared verification studies.

One strength of conspectus methodology is that it permits improvements and enhancements, (e.g., the current development of Preservation Scope Notes within the Conspectus Online framework). Another strength is the usefulness of conspectus data not only as the basis for cooperative action in preservation but also in cataloging and retrospective conversion. A further strength is the flexibility of conspectus methodology that permits adaptations in different libraries and for different purposes.

There is widespread agreement that the conspectus has fostered increased communication among collection development librarians and has set a clear course toward a standardized collection assessment methodology. Perhaps this is its greatest benefit to date.

If the achievement is real, why has the conspectus not yet realized its potential? Some reasons have been suggested, including the critical factor of the incompleteness of its documentation. Another important factor is that the complex conspectus methodology, with its detail and comprehensiveness, combining time-consuming tasks of collection description, evaluation, and coordination, has inhibited wider application and acceptance. Even libraries that have committed substantial resources to the conspectus have not moved far beyond applying the benefits of local coordination and cooperation to dealing concretely with issues of regional and North American cooperation. But the foundation has been laid and, using the conspectus as its principal tool, NCIP has built a substantial framework. More tools and more hands are needed. While a strong cooperative spirit clearly exists, that spirit has not been molded into a complete construct capable of supporting on a national scale the complex and difficult decisions of resource allocation and coordination. The challenge remains to us to provide "adequate national coverage of significant research resources" through collaborative, distributed collection management.[20]

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Back to the Future: A Personal Statement on Collection Development in an Information Culture

Erwin K. Welsch

During the 1970s, collection development librarians were beset by the combined impact of increased prices, new definitions of the words information *and* resources, *and other factors they did not control. The use of computer technology can affect collection development importantly and enable selectors and other subject specialists to take advantage of new opportunities to become proactive participants in an information network as libraries move from the concept of ownership of resources to access to information. Implementation of a "Selector's Workstation," a microcomputer linked with a local computer center and external databases through telecommunications networks, provides a resourceful means for coping with the challenges of new information needs, including formats such as CD-ROM.*

The title "Back to the Future" has several meanings. It refers first to a talk I gave almost twenty years ago called "Library of the Future." I mentioned that Marshall McLuhan, in *Gutenberg Galaxy,* claimed books and libraries were nothing more than antiquated relics soon to be replaced by more modern and efficient information utilities.[1] Many in that audience, which was composed almost entirely of intense computer users, agreed. But, as a traditionalist librarian, I also quoted from the 1969 *Report of the National Commission on Libraries,* which stated it was important to realize that despite the technical virtuosity of the times, books would continue to be important for the foreseeable future.[2]

An "Infinitely Indexed Memory Bank" that would combine data, information, and concepts—a type of early expert system—was described in the speech. Questions would be asked orally and the memory bank would respond verbally or with a printout. Then I pointed out that the "Bank" ex-

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isted only on the spaceships of egg-shaped invaders in a 1950s epic called *Earth versus the Flying Saucers,* for I was trying, not too subtly, to deflate the idea of technology as a universal panacea for libraries.

Perhaps science fiction images and the idea of libraries of the future come jointly to mind as a reaction to, or a defense against, too many years of extravagant and by now repetitious claims. For example, a recent issue of *PC Magazine* featured an article in which the author noted, "We'll look back at books like we do all traditional things when technology passes them by."[3] Or perhaps it is because in the 1960s, collection development librarians did not need new techniques or technology. Books were inexpensive and abundant and budgets were comparatively substantial. We built traditional collections with the belief that each research library could be independent unto itself and have the resources to support any program that a university wanted to introduce. Electronic information was still largely a gleam in the eyes of visionaries or science fiction script writers.

A second meaning stems from the movie of the same name, starring Michael J. Fox. The hero, Marty, races around in time in a computerized automobile to keep himself from being erased—helped no doubt by an issue of *RQ* prominently displayed in his room in an early scene.[4] He changes the past, then speeds to the future to help with a problem his own children are creating. It seems to me that what happened to collection development librarians in the 1970s was, in a sense, analagous to what happened to Marty. Suddenly thrust into a speeding vehicle—one that could be called information and resource provision—that began to take off at accelerating speed and threatened to vanish in a burst of flame, our security and self-satisfaction quickly proved to be an illusion.

Unlike Marty, who put his foot on the accelerator and had tight control of the steering wheel, collection development librarians controlled neither speed of change nor direction. We were carried along by events over which we seemed to have little control. The numbers of books and serials, as well as their prices, increased at what seemed to be a geometric rate, and library funding did not keep pace. Publishers' use of devices such as institutional pricing meant that costs grew at an alarming rate. The result was that every research library was able to purchase an increasingly smaller percentage of the world's total scholarly output.

In addition, the definition of *resources* and *information* began to incorporate online bibliographic databases and other electronic media. By dialing into a database, a librarian—or anyone else skilled in the then-new technology—could quickly and, in comparison to most of our indexing tools, easily locate references to the most current information. But cost was high for information that was, essentially, nonrenewable once purchased, for libraries did not and do not control most databases. Instead, profit-making organizations took command, charging by the fraction of a second or for individual citations, thereby clearly demonstrating information's value. Currently there is a trend for conglomerates to swallow information databases of every variety, and already-high costs will rise as information becomes even more internationalized.

Libraries also dealt poorly with, or ignored entirely, questions of computerized data, particularly in the social sciences. A better job must be done as the government contemplates wider distribution of information in machine-readable format, which requires mediation to be useful.[5] If libraries are not equipped to provide mediated access to that information, other utilities, probably profit-making ones, will. If libraries cannot or do not provide access to profit-making databases, they may be unable to maintain the infrastructure needed to support unprofitable fields, particularly in the humanities.[6]

Just as the scope of online bibliographic services was unanticipated a decade ago, events that are ignored or misunderstood at the time they occur can have profound effects on the future. Growth in information resources and availability does not proceed in a straight line from one development to the next but makes leaps whose implications initially may be poorly understood.

One such leap was the publication of data in new forms that burst upon us in the 1980s. Floppy disks, hard disks that store the equivalent of a mainframe of a decade ago, and CD-ROM disks with their need for the design of sophisticated retrieval engines all present new ways of storing, manipulating, and retrieving information.

As I look to the next decade and the provision of information and resources, I feel like Janus sitting in the accelerating automobile that I have described—facing backwards to be certain that the most important aspects of traditional collection development are retained, and also to the front, to try and incorporate the best of new technology and information innovation. I do not believe we will ever see a Lancastrian paperless, or bookless, single-tiered information society but rather will have one that is complex and multileveled in which printed text, video, machine-readable data, and other new information resources as yet unforeseen intermingle and in which users of one type or format of information are likely to use other formats as well. For I share with Horowitz and others the belief that "the history of science and technology indicates that the latest and newest modes of communication and transportation do not liquidate the earlier forms, but rather become value-added phenomena."[7]

THE WORKSTATION

I have been skeptical of proposals that technology would solve all of a selector's or a library's problems—and having read that the founder of Wang computers is unwilling to predict what they will look like tomorrow, I'm not keen on proposing a fixed future either—but I think we are on the verge of having technology to help selectors provide information and resources in more efficient and useful ways and that some elements of science fiction may be about to become fact.

My idea of how information and resource access may look is described through the use of what I've called a "Selector's Workstation similar to those developed for online searching."[8] Ideally, it would consist of a high-powered PC enhanced with programs, either self-created or purchased, that automate operations so that little special training is required and that standardize such tasks as reformatting bibliographic information acquired from diverse sources. It would be linked to appropriate university mainframe computers and, through communication programs, with faculty members on campus and librarians and bibliographic resources elsewhere.[9] My scenario is derived from my own experiences working with the creation of a similar, albeit less intricate, workstation for the past year; what I know of library activities elsewhere (particularly RLIN and RLG); and information from faculty members locally and nationally in a recent American Council of Learned Societies' survey. They stressed the need, in addition to increased book funds, for more information concerning acquisitions and more access to information in different formats.[10] Growth of microcomputer use among faculty members from less than 1 percent to more than 50 in just a few years—even conceding that most use is currently for word processing—should indicate a potentially very different future for all librarians in an information culture.[11]

Of course the first thing would be hard-wired access to an electronic catalog of local holdings, including those of libraries with which a library has collection-sharing arrangements. It must be up-to-date and searchable in various ways, including the use of Boolean operators. Rapid access to a combined database of OCLC, RLG, WLN, and other cataloging networks, as well as foreign national libraries and databases through a linked systems project, for verification of a citation or information about holdings elsewhere would naturally follow.[12]

We would want selection tools, including *Forthcoming Books,* the *Weekly Record,* and others, available online. A selector would go through the list, choosing those books or serials wanted for the collection by touching the screen with a light pen or moving a mouse and clicking a button to indicate a choice.[13]

After finishing a list, the titles chosen would be displayed for review, possibly deleted—because of second thoughts—with the push of one key, or added to a deferred, second priority list with the click of another. A third keystroke would transmit the orders either to the library's centralized acquisitions department or directly to a vendor for delivery to the library. Implementation of electronic acquisitions systems has the capacity for dramatically changing the way a library conceives of acquiring and distributing materials. Because of this change, the centralized models we have used may no longer be functional. Closer joining of selection and acquisition processes in a highly decentralized system that would include sending a shelf-ready book directly to a branch library or individual librarian's office is now more logical.

The system would enhance information interaction between faculty members and library subject specialists. Faculty members would be able to transfer requests for materials or information to a librarian electronically. Once in machine-readable format, questions become easily manipulated and transferable to another, more appropriate specialist for an answer or into a request for materials. But selectors, who receive information about new acquisitions quickly, also could be more proactive. One of the changes may be away from the concept of resource ownership to information access with librarians changing in their service outlook from proprietor to "sleuth."[14] A selector or subject specialist's sound and thorough personal knowledge of campus research interests would be supplemented with interactive database of faculty scholarly and teaching activities. New acquisitions would be checked against both.[15] If a title were regarded as likely to be of high, immediate interest to a faculty member, acquisition information would be sent immediately through a campus electronic mail system. If a faculty member wanted a book, he or she would tap a key to reserve it upon arrival or it could be delivered to the departmental office, as has been done at the University of Minnesota and other institutions.[16]

Although admittedly more complex, online availability of tables of contents of recently arrived serials would make possible a type of SDI system now used only in special libraries. This information would be directed immediately to faculty members because any information, once it is in an electronic format, is capable of being readily disseminated. Faculty could later request a copy of an article, again electronically, with a click of a button or touch of a light pen. Book and serial information would be uniformly formatted to be added easily to a faculty member's personal database for later selection. As was noted during the Brown University Workstation Project, scholars will want to "download portions of larger databases and construct their own," with the library acting as consultant.[17]

If a selector has doubts about the wisdom of purchasing an expensive book or serial, both current and historical circulation records would be available online for analysis concerning at least one definition of use—that is, whether similar materials have been circulating. The file of current research interests and research directions would provide a second check. A third would contain the RLG Conspectus or some similar, nationally agreed upon indicators of collecting strengths and activities in other libraries together with the names and electronic mail addresses of subject or area selectors.[18] One command would send a query about an expensive item to ask whether that library was going to purchase. In the meantime, the title would automatically be added to a file for later review. Availability of online information about current and anticipated course offerings together with numbers of students would give a selector another indicator of campus activities.[19]

Decisions made would be online immediately to other selectors sharing collection responsibilities, either in the same library system or in another with cooperative arrangements, and thereby answer many of the questions that cooperation invariably raises. Have you gotten? Are you getting? Will you get? become easy queries to deal with electronically. Rapid knowledge of what is available locally, regionally, and nationally would help collection development librarians build sounder collections, realizing how their efforts combine with libraries elsewhere.

An easily accessible and understandable accounting program would provide instant information at the end of a selection session as to how much has been spent to date, on which academic programs, and what books cost in various fields. It would project an estimated budget depletion date if present rates of expenditures are continued and provide similar management information through the use of simple commands.

Collection evaluation through list checking would be easily done in comparison to the arduous manual labor necessary now. The lists to be checked would be put into machine-readable form once by one library or a publisher and could then be checked against local holdings through a database comparison.[20] The results of collection overlap or citation studies would also be online and assist in selection.

Evaluation of deteriorating materials in a collection could be done in the same way, for once a title has been identified as crumbling in one library, the likelihood of its also falling apart on the shelves of another is very high. As electronic lists of deteriorating titles were circulated, selectors could tell which were in their collections by automated checking against a machine-readable catalog or, preferably, because location symbols would have become part of the international ownership record, would receive lists of only those titles identified as being part of a local collection.

Selectors would use their library's collection policy statements, as well as personal knowledge of those areas that it intended to maintain in strength, to identify books and serials for perservation as well as selection. They would be able to tell instantly whether deteriorating materials they have identified have already been preserved or have been selected for filming elsewhere, thereby saving a great deal of duplicative effort now going on in preservation. Lists of titles being planned for preservation in the local library would also be available online to others.

Means of providing access to online databases and coping with high costs are difficult to foresee because of the profits involved.[21] Currently, online databases involve royalty, citation, communication, and other charges, and it may be difficult to convince their owners that new procedures would be equally profitable. One way, primarily for those databases consulted most frequently, could be the use of distributed databases in CD-ROM that would be accessible campuswide through a PC network. Universities or regional consortia could purchase site licenses for other major online services, particularly for databases that offer educational discounts. Database vendors might be able to earn a higher profit by selling subscriptions, with monthly CD-ROMs distributed as new issues, than by leasing because they would gain the funds currently expended on telecommunications. Databases would then be available though the computing center—to hard-wired terminals at 9600 bps rather than 1200 bps with consequent greater efficiency—for library or other local use, including reformatting the information onto CD-ROM or into bibliographies or SDI services. In that way, costs that would be intolerable for a library materials budget become acceptable when regarded as universitywide or even regional resources. With availability, librarians would be able to take a more proactive role in the distribution of information on campus. They would not have to curtail searches or limit access to information because of the constant worry about how much each search costs, and they would be able to train end users in the new information culture.

Because online bibliographic searching becomes affordable, the library could cancel some printed indexes and would come to rely instead on access to various online databases, with consequent savings in shelf space and subscription costs. In the same way, a selector may have the choice of deciding whether to purchase hard copy of such categories of information as newspapers and serials or rely on the online services that can provide hard copy in the same way that BRS or Dialog do now for some titles.

Downloading and optional printing of complete text may become viable alternatives, with profound effects on collection development.

CONCLUSION

In the 1970s collection development librarians, even libraries in general, were driven by forces over which they did not exercise very much control. With the continued growth of variety of information resources in the decade ahead, it will be difficult for them to seize the wheel and steer events in directions they want them to go. Yet they must, for the alternatives are grim. If selectors do not now take control of the information and resources agenda and govern it, the future will be yesterday and others will continue to be in control of the agenda. As we move toward an uncertain future from a still dimly perceived past, we must remember that perception of accessibility will affect use: systems that successfully integrate resources, whether they are in libraries or elsewhere, are those most likely to be chosen and utilized.[22] We must seek to create such systems with an entrepreneurial spirit, energy, imagination, and even daring, for, to quote from Eliot's "Burnt Norton,"

> Time past and time future
> What might have been and what has been
> Point to one end, which is always present.[23]

A Selector's Workstation of the type described, perhaps with the addition of other functions not yet imagined, would help collection development librarians govern the agenda in the decade ahead. It uses personnel and material resources effectively—they are always too slim in comparison to what is being demanded of them—and provides for selectors and, perhaps by extension all librarians, new roles in a campus information culture. Many of the individual components of this system are available now. The task for the immediate future is to tie them together through careful system analysis of needs and potentials.

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Untraced References in the Machine-Readable *Library of Congress Subject Headings*

Karen Markey and Diane Vizine-Goetz

General explanatory see *references (MARC tag 260), general explanatory* see also *references (MARC tag 360), and scope notes (MARC tag 680) are fields in LCSH-mr records that contain references to headings in bibliographic records. Such fields, when displayed to online catalog searchers, direct searchers to other established headings. These references are embedded in explanatory text, making it difficult for systems staff to apply the same or similar software to these three fields that is applied to* see from *and* see also from *tracings (MARC tags 4xx and 5xx) to determine automatically whether references are posted. When general references and scope notes are displayed to catalog searchers without first verifying if the headings referred to are posted, searchers pursuing the cited headings may be led down a blind alley. This article examines the effort required of library staff members to review these fields, delete unposted references and tracings, and to substitute posted ones in their place.*

Since spring 1986, the Library of Congress (LC) has been distributing the machine-readable *Library of Congress Subject Headings* (LCSH-mr) to subscribers in the form of a cumulative master tape and weekly update tapes. This availability has motivated library systems staffs, bibliographic service system designers, and integrated library systems vendors to develop subject-authority capabilities based on LCSH-mr records for their respective systems. They also have added LCSH-mr to their systems to enhance the entry vocabulary of online catalogs and to display relationships between subject headings in bibliographic records.

When libraries add LCSH-mr to online systems, reciprocals of *see from* tracings (MARC tags 4xx), i.e., *see* references, are created automatically. These reciprocals refer searchers to posted, established headings comparable to the unestablished terms of *see* references. Once searchers find established headings, reciprocals of *see also from* tracings (MARC tags

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5xx), i.e., *see also* references, refer them to one or more other posted, established headings related to the original heading. *See* and *see also* references are made only to posted, established headings, not to unposted, established headings because such references would be blind references (headings for which there are no bibliographic records in the database).

General explanatory *see* references (MARC tag 260), general explanatory *see also* references (MARC tag 360), and scope notes (MARC tag 680) are fields in LCSH-mr records that contain references to headings in bibliographic records. Such fields are displayed to online catalog searchers because the references direct searchers to other established headings. References are embedded in explanatory text, which makes it difficult for systems staff to apply the same software to these three fields that is applied to *see from* and *see also from* tracings (MARC tags 4xx and 5xx) to determine automatically whether references are posted. Also, references in the former three fields are made not only to subject headings but to subject heading components, e.g., subdivisions or subject headings beginning with a certain word or phrase. Thus, the procedure for determining whether references are made to posted headings is complicated by references made to subject heading components in general references and scope notes. When general references and scope notes are displayed to online catalog searchers without first verifying if the headings referred to are posted, searchers pursuing the cited headings may be led down a blind alley.

Garrison was the first to acknowledge the presence of blind references in LCSH-mr and the need for computer-assisted techniques to eliminate them.[1] The Council on Library Resources then supported a research project on "Increasing the Accessibility of the Machine-readable LCSH."[2] This project yielded data and analyses on the occurrences of fields for general explanatory *see* references, general explanatory *see also* references, and scope notes in LCSH-mr records and on the occurrences of references in these three fields. Results are given in this article along with estimates of the effort needed to review references in these fields to verify whether the references are posted in the library catalog. This study identifies the types of references in these three fields that are traced in *note/example under* fields (MARC tag 681) of LCSH-mr records. It also covers the searching capabilities that online systems must have to enable library staff to search and verify references.

LCSH-MR USED IN THIS STUDY

The LCSH-mr used in this study is a cumulative master tape containing 160,706 subject authority records created or modified through July 6, 1987. This version includes headings from the tenth edition of the printed *LCSH* and additions and changes published in the 1985 annual supplement and *LC Subject Headings Weekly Lists* through spring 1987. The version of LCSH-mr used almost corresponds to the eleventh edition of the printed *LCSH*, which contains headings and references established by LC through August 1987.

This version of LCSH-mr has also been enhanced with reciprocals of *see also from* tracings (MARC tags 5xx). The reciprocals are *see also* references and have been added to LCSH-mr records in local tag 9xx fields. The 9xx range of tags is not authorized for use in the *USMARC Format for Authority Data*, and thus does not conflict with authorized fields.[3]

GENERAL EXPLANATORY *SEE* REFERENCES (MARC TAG 260)

LCSH-mr records bearing general explanatory *see* reference fields (MARC tag 260) contain an unestablished form of the subject referred from in the established heading field (MARC tag 1xx). The established form of heading(s) referred to is given in the general explanatory *see* reference field (MARC tag 260) and is usually accompanied by some explanatory text. An example of this field from LCSH-mr is

Unestablished topical subject heading (MARC tag 150):
  Cold weather conditions
General explanatory *see* reference (MARC tag 260):
  $i subdivision $a Cold weather conditions $i under subjects, e.g., $a Mining engineering—Cold weather conditions

Although the term "Cold weather conditions" resides in the established heading field, i.e., MARC tag 1xx, the term is not an established topical subject heading because its authority record also contains a general explanatory *see* reference field (MARC tag 260). The general *see* reference directs the searcher to the subdivision "Cold weather conditions" and provides an example of this subdivision added to an established subject heading. When example subject headings are prefaced by "e.g.," they are traced in the note/example under fields (MARC tag 681) of referenced subject headings. An example of this field based on the previous example is

Established topical subject heading (MARC tag 150):
  Mining engineering—Cold weather conditions
Tracing the unestablished heading in the note/example under field (MARC tag 681):
  $i Example under reference from $a Cold weather conditions

General *see* references are not traced when references are made to subdivisions because LCSH-mr contains no subdivision records. Thus, the subdivision "Cold weather conditions" in the previous example is not traced in any note/example under field of LCSH-mr records.

General explanatory *see* reference fields (MARC tag 260) are repeatable fields in the MARC format for authorities; however, this field is not repeated in the 837 LCSH-mr records bearing it. The 837 LCSH-mr records bearing general *see* references are only 0.52 percent of the total of 160,706 LCSH-mr records. Nearly all (831) LCSH-mr records with general *see* references are topical subject heading records (MARC tag 150).

Two subfields are used in these references: explanatory text (subfield $i) and the subject heading(s) referred to (subfield $a). These subfields are repeated in LCSH-mr records. Explanatory text (subfield $i) occurs 1,703 times, and subject headings (subfield $a) occur 1,409 times in these records. When more than one heading is enumerated in a single subfield $a, both subfield delimiter ($) and data element identifier (a) are not repeated before headings following the initial heading. Thus, the latter total is only a rough estimate of the number of references that would have to be reviewed in an evaluation of references in general *see* references.

The previous example of a general *see* reference represents the most frequently occurring subfield pattern, i.e., "iaia," which occurs in 43.73 percent of records bearing such references. The second most frequently occurring subfield pattern is "iai," which occurs in 21.74 percent of records bearing such references. There are seventeen other subfield patterns in general *see* reference fields of LCSH-mr records. The longest reference field, which occurs only once, bears six explanatory texts (subfield $i) and six subject headings (subfield $a).

LCSH-mr records with general *see* references (MARC tag 260) average exactly four variable length fields and 160.32 characters. Although these records average 2.434 fewer variable length fields than all 160,706 LCSH-mr records, they average 24.76 more characters than LCSH-mr records. The main reason is the length of general explanatory *see* references, an average 114.77 characters per record. (The longest general *see* reference has 668 characters.)

Subfields for subject headings (subfield $a) in general *see* reference fields (MARC tag 260) refer searchers to one or more of five types of references:

- Subdivisions
- Unsubdivided subject headings that begin with a certain word or phrase
- Examples of unsubdivided subject headings
- Examples of subdivided subject headings
- Subdivided subject headings that are examples of the subdivision(s) referred to elsewhere in the reference

Examples follow:

1. Unestablished form of topical subject heading (MARC tag 150);
   Enlistment
   General explanatory *see* reference (MARC tag 260) to subdivision(s):
   $i subdivision $a Recruiting, enlistment, etc., $i under names of individual military services
2. Unestablished form of topical subject heading (MARC tag 150):
   British-Dutch War . . .
   General explanatory *see* reference (MARC tag 260) to unsubdivided subject heading(s) beginning with a certain word or phrase:
   $i subject headings beginning with the words $a Anglo-Dutch War
3. Unestablished form of topical subject heading (MARC tag 150):
   Ecclesiastical rites and ceremonies
   General explanatory *see* reference (MARC tag 260) to example(s) of unsubdivided subject headings:
   $i particular rites and ceremonies, e.g., $a Funeral rites and ceremonies; Lord's Supper
4. Unestablished form of topical subject heading (MARC tag 150):
   Precolumbian art
   General explanatory *see* reference (MARC tag 260) to subdivided subject headings:

Indians—Art; Indians of Mexico—Art; Indians of Central America—Art; $i and similar headings

5. Unestablished form of topical subject headings (MARC tag 150):
   Instrumental settings
   General explanatory *see* reference (MARC tag 260) to subdivided subject heading(s) that are example(s) of the subdivision(s) referred to elsewhere in the reference:
   $i subdivision $a Instrumental settings $i under headings for vocal music, e.g., $a Folk-songs—Instrumental settings; Operas—Instrumental settings; Spirituals (Songs)—Instrumental settings

Headings referred to in general *see* references in examples three and five are traced in note/example under fields (MARC tag 681) of LCSH-mr records for those headings preceded by "e.g." General *see* references are not traced when references are made to headings beginning with certain words or phrases because there are no authority records under which to put such tracings (example two). General *see* references are not traced when references are made to subdivisions (example one) because LCSH-mr contains no subdivision records. In example four, an unestablished topical subject heading refers searchers directly to three subdivided subject headings. The designation "e.g." does not precede these headings; thus, the authority records for these three headings do not have note/example under fields (MARC tag 681) tracing these references.

Results of an analysis of a 10% sample (83) of LCSH-mr records with general *see* references demonstrate the effort needed by libraries to review these references. Table 1 lists the number of occurrences of subject heading types in general *see* references and the number of records in which each type occurs. The greatest number of references are made to subdivisions,

TABLE 1
GENERAL *SEE* REFERENCES REQUIRING REVIEW

	Subdivisions	Headings Beginning with Word or Phrase	Unsubdivided Headings	Subdivided Headings
Number	76.00	6.00	13.00	58.00
Maximum per record	4.00	1.00	3.00	4.00
Number of records with this type of reference	65.00	6.00	6.00	42.00
Average number of records with this type of reference	1.17	1.00	2.17	1.38

Summary statistics:
Number of LCSH-mr records with general *see* fields = 837
Number of records without references in this field = 6 (7.23 percent of sample)
Number of records with one or more references = 77
Total number of references = 153
Average number of references per record with one or more references = 1.99
Estimated number of records needing review = 776
Estimated number of references needing review = 1,544

followed by subdivided subject headings. Six records bear general explanatory *see* references that do not make specific references. One example of this field is

Unestablished topical subject heading (MARC tag 150):
International teaching positions
General explanatory *see* reference (MARC tag 260) with no explicit references:
$i similar headings

When general explanatory *see* references bear one or more references, an average of 1.99 references are made per record that need to be reviewed by library staff. That is, an estimated 1,544 references in the 837 LCSH-mr records bearing general explanatory *see* reference fields need review.

GENERAL EXPLANATORY *SEE ALSO* REFERENCES (MARC TAG 360)

General explanatory *see also* references (MARC tag 360) contain "explanatory text and the headings referred to that are required when relationships exist between an established subject and other established subjects that cannot be adequately conveyed by one or more simple cross references generated from 5xx *see also from* tracing fields."[4] The established form of heading referred from is given in the established heading field (MARC tag 1xx). The form of heading referred to and explanatory text are given in the general explanatory *see also* reference field (MARC tag 360). An example from LCSH-mr of this field is

Established form of topical subject heading (MARC tag 150):
African languages
General explanatory *see also* reference (MARC tag 360):
$i names of languages, e.g., $a Bantu languages, Fulah language, Timne language; $i also subdivision $a Languages $i under names of African countries, regions, etc., e.g., $a Nigeria—Languages

The established form of heading is "African languages." The general explanatory *see also* reference directs searchers to names of languages and gives three examples of established headings for languages; it also directs searchers to the subdivision "Languages" and gives an example of an established heading bearing this subdivision. Example subject headings prefaced by "e.g." are traced in the note/example under fields (MARC tag 681) of referenced subject headings.

General explanatory *see also* reference fields (MARC tag 360) are repeatable fields in the MARC format for authorities; however, this field is not repeated in the 3,075 LCSH-mr records bearing this field. Nearly all (3,034) LCSH-mr records with general *see also* reference fields are topical subject heading records (MARC tag 150).

Two subfields are used in these references: explanatory text (subfield $i) and the subject heading(s) referred to (subfield $a). These subfields are repeated in LCSH-mr records. Explanatory text (subfield $i) occurs 6,176 times, and subject headings (subfield $a) occur 5,441 times in these records. When more than one heading is enumerated in a single subfield $a, both subfield delimiter ($) and data element identifier (a) are not repeated before headings following the initial heading. Thus, the latter total is only a rough estimate of the number of references that would have to be reviewed in an evaluation of references in general *see also* references.

The most frequently occurring subfield pattern, "iaia," which occurs in 42.96 percent of records bearing general explanatory *see also* references, is the same as the most frequently occurring pattern for general explanatory *see* references. There is a total of twenty-nine subfield patterns in general *see also* references. The longest reference field, which occurs only once, bears eight explanatory texts (subfield $i) and eight subject headings (subfield $a).

LCSH-mr records with general explanatory *see also* references average 18.22 variable length fields and 497.10 characters. LCSH-mr records generally average only 6.434 variable length fields and 135.56 characters.[5] LCSH-mr records with general explanatory *see also* references have more *see also from* tracings (MARC tags 5xx) and *see also* references (tags 9xx) than LCSH-mr records generally. LCSH-mr records usually contain about one *see also from* tracing and one *see also* reference; LCSH-mr records with general *see also* reference fields contain between two and three *see also from* tracings and almost nine *see also* references. General explanatory *see also* references average 116.81 characters per record. (The longest such reference has 587 characters.)

General *see also* references (MARC tag 360) bear subfields for subject headings (subfield $a) that refer searcher to one or more of five types of references:

- Subdivisions
- Unsubdivided subject headings that begin with a certain word or phrase
- Examples of unsubdivided subject headings
- Subdivided subject headings that are examples of the subdivision(s) referred to elsewhere in the reference
- Unsubdivided subject headings in which a qualifying word or phrase is usually enclosed in parentheses

Examples follow:

1. Established topical subject heading (MARC tag 150):
   Armored troops
   General explanatory *see also* reference (MARC tag 360) to subdivision(s):
   $i subdivision $a Armored troops $i under individual military services; and subdivision $a Armed Forces—Armored troops $i under names of countries
2. Established topical subject heading (MARC tag 150):
   Chemistry
   General explanatory *see also* reference (MARC tag 360) to unsubdivided subject heading(s) beginning with a certain word or phrase:
   $i subject headings beginning with the word $a Chemical
3. Established topical subject heading (MARC tag 150):
   Fruit
   General explanatory *see also* reference (MARC tag 360) to example(s) of unsubdivided subject headings:
   $i particular fruits, e.g., $a Apple, Orange

4. Established topical subject heading (MARC tag 150):
   Hormone therapy
   General explanatory *see also* reference (MARC tag 360) to subdivided subject heading(s) that are example(s) of the subdivision(s) referred to elsewhere in the reference:
   $i subdivision $a Therapeutic use $i under specific hormones and groups of hormones, e.g., $a Estrogen—Therapeutic use; Steroid hormones—Therapeutic use
5. Established topical subject heading (MARC tag 150):
   Islam
   General explanatory *see also* reference (MARC tag 360) to a qualifying word or phrase in unsubdivided subject heading(s):
   $i special headings with $a Islam $i added in parentheses, e.g., $a Angels (Islam); $i and subdivision $a Islam $i under special topics, e.g., $a Mysticism—Islam; $i also headings beginning with the words $a Islamic $i and $a Muslim

Headings referred to in general *see also* references in examples three, four, and five are made in the note/example under fields (MARC tag 681) of LCSH-mr records for those headings preceded by "e.g." General *see also* references are not traced when references are made to subdivisions (example one) or to headings beginning with certain words or phrases (example two).

Results of an analysis of a 5 percent sample (154) of LCSH-mr records with general *see also* references demonstrate the effort needed by library staff to review these references. The number of occurrences of the five subject heading types in general *see also* references and the number of records in which each type occurs are listed in table 2. The greatest number of

TABLE 2
GENERAL *SEE ALSO* REFERENCES REQUIRING REVIEW

	Subdivisions	Beginning with Word or Phrase	Unsubdivided Headings	Subdivided Headings	Qualifying Word(s) in Headings
Number	135.00	6.00	82.00	142.00	3.00
Maximum per record	3.00	2.00	8.00	5.00	1.00
Number of records with this type of reference	111.00	5.00	35.00	89.00	3.00
Average number of records with this type of reference	1.22	1.20	2.34	1.60	1.00

Summary statistics:
Number of LCSH-mr records with general *see also* fields = 3,075
Number of records without references in this field = 7 (4.55 percent of sample)
Number of records with one or more references = 147
Total number of references = 366
Average number of references per record with one or more references = 2.49
Estimated number of records needing review = 2,935
Estimated number of references needing review = 7,308

references (142) is made to examples of subdivided subject headings, followed by subdivisions (135). Seven records bear general explanatory *see also* references that do not make specific references. One example of this field is

Established topical subject heading (MARC tag 150):
  Hunting dogs
General explanatory *see also* reference (MARC tag 360) with no explicit references:
  $i particular breeds of hunting dogs

An average of 2.49 references per record need to be reviewed by library staff. That is, an estimated 7,308 references in the 3,075 LCSH-mr records bearing general *see also* reference fields need review.

SCOPE NOTES (MARC TAG 680)

The *Subject Cataloging Manual (SCM)* defines a scope note as serving "to limit the scope of a heading as used in the catalog, thereby helping readers to determine to what extent it covers the material they seek, and making it possible for catalogers to maintain consistency in assigning the heading to new works cataloged."[6] There are five types of scope notes in LCSH-mr:

- A single heading defined without reference to any other headings
- A single heading described with reference to more specific headings
- A single heading with explanation for special cases
- Two or more closely related or overlapping headings
- Special instructions, explanations, referrals, etc.

Except for the first type of scope note, references to other subject headings and subdivisions are made. Examples of the five types of scope notes are given in *SCM*.

There are 3,402 LCSH-mr records with scope note fields (MARC tag 680). Scope notes do not occur in 97.88 percent of LCSH-mr records. When they do occur, there are from one to eight scope notes per record; however, less than 5 percent of LCSH-mr records with scope notes contain multiple occurrences. The majority (90.95 percent) of LCSH-mr records with scope notes are topical subject heading records; 5.5 percent are geographical name records.

Two subfields are used in scope notes: explanatory text (subfield $i) and the subject heading(s) referred to (subfield $a). These subfields are repeated in LCSH-mr records. Explanatory text (subfield $i) occurs 3,743 times, and subject headings (subfield $a) occur 3,201 times in LCSH-mr records bearing scope notes. When more than one heading is enumerated in a single subfield $a, both subfield delimiter ($) and data element identifier (a) are not repeated before headings following the initial heading. Thus, the latter total is a rough estimate of the number of references that would have to be reviewed in an evaluation of references in scope notes. (Note that in the following scope note examples, some scope notes have coding for explanatory text [subfield $i] embedded well into the text, instead of at the beginning, and do not have coding for subject headings [subfield $a]. LC is aware that some subfield coding in scope notes needs to be corrected.)

The most frequently occurring subfield pattern is a single subfield for explanatory text (subfield $i), which occurs in 34.82 percent of records with scope notes. This pattern probably occurs when the scope note is the first type, i.e., a single heading defined without reference to other headings. An example from LCSH-mr of such a scope note is

Established topical subject heading (MARC tag 150):
Annihilationism
Scope note (MARC tag 680) bearing only one subfield $i for explanatory text:
$i Here are entered works on the Christian theological doctrine that those found unworthy by God of eternal life cease to exist at death.

There are eighteen subfield patterns in scope notes. The longest pattern, which occurs in four scope notes, bears six explanatory texts (subfield $i) and six subject headings (subfield $a).

LCSH-mr records with scope notes (MARC tag 680) average 13.91 fields and 504.38 characters. LCSH-mr records generally average only 6.434 variable length fields and 135.56 characters. LCSH-mr records with scope notes have more *see also from* tracings (MARC tags 5xx) and *see also* references (tag 9xx) than LCSH-mr records generally. LCSH-mr records generally contain about one *see also from* tracing and one *see also* reference; LCSH-mr records with scope notes contain about two *see also from* tracings and almost five *see also* references. Scope notes average 220.12 characters per occurrence. (The longest scope note is 721 characters.)

Scope notes (MARC tag 680) bear subfields for subject headings (subfield $a) that refer searchers to one or more of five types of references:

- Subdivisions
- Unsubdivided subject headings
- Unsubdivided subject headings that serve as examples (including additional entries that are unsubdivided)
- Subdivided subject headings
- Subdivided subject headings that serve as examples (including additional entries that are subdivided)

Examples follow:

1. Established form of topical subject heading (MARC tag 150):
   Consular law
   Scope note (MARC tag 680) referring to a subdivision(s):
   $i Here are entered works on the legal status of foreign consuls and the legal aspects of consular service in general. Works on the law governing the consular service of an individual country are entered under the name of that country with the subdivison $a Diplomatic and consular service.
2. Established form of topical subject heading (MARC tag 150):
   Home labor
   Scope note (MARC tag 680) with an unsubdivided subject heading(s):
   $i Here are entered works on persons in urban areas producing goods at home for an outside employer. Works on industries carried on by persons and their families in rural areas producing goods at home for an outside employer are entered under $a Cot-

tage industries. $i Works on self-employed persons producing and marketing goods or services in their homes are entered under $a Home-based businesses.

3. Established form of topical subject heading (MARC tag 150):
   Chaplains
   Scope note (MARC tag 680) with an unsubdivided subject heading(s) that serves as an example(s):
   For works limited to a specific type of chaplain, the heading is qualified by the functional adjective, $i e.g., $a Chaplains, Hospital; Chaplains, Military.
4. Established form of topical subject heading (MARC tag 150):
   Equality before the law
   Scope note (MARC tag 680) with a subdivided subject heading(s):
   Works on the doctrine of equal protection of the law are entered under the heading Equality before the law—United States. Works on the doctrine of due process of law are entered under the heading Due process of law.
5. Established form of topical subject heading (MARC tag 150):
   Deep-sea temperature
   Scope note (MARC tag 680) with a subdivided subject heading(s) that serves as an example(s):
   Subdivided by locality, $i e.g., $a Deep-sea temperature—Pacific

Unsubdivided and subdivided subject headings referred to in scope notes are usually traced in a note/example under field (MARC tag 681) in other LCSH-mr records. For example, the established topical subject heading "Equality before the law" refers to two topical subject headings: "Equality before the law—United States" and "Due process of law." The authority records of both headings have the following note/example under field (MARC tag 681) referring back to the record for "Equality before the law": $i Note under $a Equality before the law. However, references to subdivisions in scope notes are not traced.

Results of an analysis of a 5 percent sample (170) of LCSH-mr records with scope notes demonstrate the effort needed by librarians to review the references in these notes. Table 3 lists the number of occurrences of subject heading types in scope notes and the number of records in which each type occurs. It also lists the number of references contained in *see also from* tracings (MARC tags 5xx) and/or note/example under fields (MARC tag 681) of the same record. For example, the established topical subject heading "Amalgamation" bears a scope note (MARC tag 680) referring to the subject heading "Amalgams." It also contains the following note/example under field (MARC tag 681) referring to the same subject heading "Amalgams": $i Note under $a Amalgams.

Forty percent (68) of records have scope notes that do not refer to subject headings or subdivisions and thus do not need review. In the 60 percent of records with scope notes that need review, the greatest number of references (104) is made to unsubdivided subject headings, followed by subdivided subject headings (66). A total of 170 references is made to subject headings; 75 of these references are also made in note/example under references (MARC tag 681) and 23 are also made in *see also from* tracings (MARC tags 5xx). When scope notes bear one or more references, an av-

TABLE 3
SCOPE NOTES REQUIRING REVIEW

	Subdivisions	Unsubdivided Headings	Subdivided Headings
Number	14.00	104.00	66.00
Maximum per record	1.00	6.00	5.00
Number of headings referred to in *see also from* tracings	0.00	22.00	1.00
Number of headings referred to in note/example under	0.00	64.00	11.00
Number of records with this type of heading	13.00	76.00	37.00
Average number of records with this type of heading	1.08	1.37	1.78

Summary statistics:
Number of LCSH-mr records with scope notes = 3,402
Number of records without references in this field = 68 (40 percent of sample)
Number of records with one or more references = 102
Total number of references = 184
Average number of references per record with one or more references = 1.80
Estimated number of records needing review = 2,041
Estimated number of references needing review = 3,674

erage of 1.8 references are made per record that need review. That is, an estimated 3,674 references in the 3,402 LCSH-mr records bearing scope notes need review.

REFERENCES TRACED IN NOTE/EXAMPLE UNDER FIELDS (MARC TAG 681)

The note/example under field (MARC tag 681) "contains a note that documents the use of the 1xx heading or subdivision term in an established heading record or a subdivision record as an example or reference in the 260, 360, and/or 680 fields of another established heading or reference record. . . . The information in this field is primarily intended to serve as a tracing of the use of headings in examples and notes to assist catalogers in updating records."[7] Generally, headings traced in this field are listed after the designation "e.g." in general references (MARC tags 260 and 360) or enumerated in most scope notes (MARC tag 680).

Note/example under fields (MARC tag 681) occurs in 5,789 (3.60 percent) LCSH-mr records. This field is repeatable in authority records, and about 2 percent of records with this field bear two such fields. The majority (87.56 percent) of LCSH-mr records with note/example under fields are topical subject heading records (MARC tag 150); 4.97 percent are geographical name records (MARC tag 151).

Two subfields are used in note/example under fields (MARC tag 681): explanatory text (subfield $i) and the subject heading(s) traced (subfield $a). These subfields are repeated in this field. Explanatory text (subfield $i) occurs 6,047 times, and subject headings (subfield $a) occur the same number of times (6,047). When more than one heading is enumerated in a single subfield $a, both subfield delimiter ($) and data element identifier

(a) are not repeated before headings following the initial heading. Thus, the latter total is a rough estimate of the number of references that direct library staff to general *see* and *see also* references (MARC tags 260 and 360) and references in scope notes (MARC tag 680). Note/example under fields has only two subfield patterns: "ia," which occurs 5,737 times, and "iaia," which occurs 155 times. Following subfields for subject headings (subfield $a), an estimated one to four tracings are listed and separated by a semicolon.

Note/example under fields (MARC tag 681) contains three types of tracings:

- Unestablished, unsubdivided subject headings
- Established, unsubdivided subject headings
- Subdivided subject headings

Examples follow:

1. Established topical subject heading (MARC tag 150):
   Construction industry $x Waste disposal
   Note/example under field (MARC tag 681) referring to an unestablished, unsubdivided topical subject heading(s) (MARC tag 150):
   $i Example under reference from $a Waste, Disposal of
2. Established topical subject heading (MARC tag 150):
   Burlesque (Literature)
   Note/example under field (MARC tag 681) referring to an established, unsubdivided topical subject heading(s):
   $i Notes under $a Burlesque (Theater); Burlesques
3. Established topical subject heading (MARC tag 150):
   Gypsy moth
   Note/example under field (MARC tag 681) referring to a subdivided, established topical subject heading(s):
   $i Example under $a Trees—Diseases and pests

Results of an analysis of a 5 percent sample (289) of LCSH-mr records with note/example under fields (MARC tag 681) provide an estimate of the number of tracings in these fields. Table 4 lists the number of occurrences of the three tracing types in note/example under fields and the number of records in which each type occurs. It also lists the number of references in *see also from* tracings (MARC tags 5xx) and/or in scope note fields (MARC tag 680) to the same record.

The greatest number of tracings (276) is for unsubdivided subject headings, followed by subdivided subject headings (50). For the total of 326 tracings to established headings, 68 are duplicated in scope notes (MARC tag 680) and 35 are duplicated in *see also from* tracings (MARC tags 5xx).

Every note/example under field (MARC tag 681) in LCSH-mr records bears at least one tracing. On the average, 1.21 tracings occur in note/example under fields. Thus, an estimated 7,005 tracings occur in the 5,789 LCSH-mr records bearing this field.

UNTRACED REFERENCES IN LCSH-MR RECORDS

Analyses of references in general explanatory *see* reference fields (MARC tag 260) (table 1), general explanatory *see also* reference fields

TABLE 4
TRACINGS IN NOTE/EXAMPLE UNDER FIELDS

	Subdivisions	Unsubdivided Headings	Subdivided Headings
Number	24.00	276.00	50.00
Maximum per record	4.00	3.00	3.00
Number of headings referred to in *see also from* tracings		31.00	4.00
Number of headings referred to in scope notes		61.00	7.00
Number of records with this type of heading	14.00	235.00	46.00
Average number of records with this type of heading	1.71	1.17	1.09

Summary statistics:
Number of LCSH-mr records with note/example under fields = 5,789
Number of records without tracings in this field = 0
Number of records with one or more tracings = 289
Total number of tracings = 350
Average number of tracings per record with one or more tracings = 1.21
Number of records with tracings = 5,789
Estimated number of tracings = 7,005

(MARC tag 360) (table 2), and scope note fields (MARC tag 680) (table 3) result in the following number of references in LCSH-mr records requiring review:

Tag	*Number of References*
260	1,544
360	7,308
680	3,674
Total	12,256

The difference between the estimated number of references requiring manual review (12,526) and the estimated number of tracings in note/example under fields (7,005) is 5,521. That is, 5,521 references in general explanatory *see* references (MARC tag 260), general explanatory *see also* references (MARC tag 360), and scope notes (MARC tag 680) are not traced in note/example under fields. Estimates of the number of references not traced in note/example under fields for eight categories of references appear in table 5. Estimates are based on the number of references in each category in the 5.0 percent and 10.0 percent samples of headings from these three fields.

Subdivisions are not traced because LC distributes no authority records for subdivisions. References to subject headings beginning with a certain word or phrase are not traced because there is no established heading record for the initial word or phrase. Additional entries in scope notes (MARC tag 680) are headings that are sometimes traced, are sometimes not traced, and are sometimes assigned subject headings that are not in LCSH-mr. Direct references are not traced when they are not preceded by

TABLE 5
TYPES OF UNTRACED REFERENCES

Tag	Number of References	Type of Reference
260	760	Subdivision
260	60	Heading beginning with word(s)
260	80	Heading not preceded by "e.g."
360	2,700	Subdivision
360	120	Heading beginning with word(s)
360	860	Heading not preceded by "e.g."
680	280	Subdivision
680	360	Additional entry
Total	5,220	

the "e.g." designation. Four types of references that are not traced in note/example under fields account for nearly 95 percent (5,220) of the estimated 5,521 untraced references in general *see* and *see also* references and scope notes.

LIBRARY STAFF REVIEW OF UNTRACED REFERENCES

If references in general *see* and *see also* reference fields and scope notes are left unchecked in LCSH-mr records, library patrons pursuing such references will be led down blind alleys. Library staffs need to develop strategies to "clean up" references in these fields. Note/example under fields (MARC tag 681) cannot be relied upon to trace all subject headings and subdivisions in the former three fields. Perhaps the best strategy for verifying references in general *see* and *see also* references (MARC tags 260 and 360) and scope notes (MARC tag 680) is to tackle each of these three fields separately. For example, library staff members first verify general explanatory *see* references (MARC tag 260). When verifying references in general *see* references, the staff must also verify whether references exist in one or more note/example under fields (MARC tag 681) and record changes in these fields. When records with general *see* references are completed, staff can move on to general *see also* references (MARC tag 360), repeat the verification process, and do the same for scope notes (MARC tag 680).

Verification of references requires that integrated library systems have capabilities that enable staff to retrieve LCSH-mr records with general reference and scope note fields, search for references in the online catalog database, and edit these fields. Once staff members have retrieved the appropriate LCSH-mr records, they need the following searching capabilities to find the different types of references in general references and scope notes:

- Search for subdivisions
- Alphabetical browsing of unsubdivided subject headings to find subject headings beginning with a word or phrase
- Search for unsubdivided subject headings
- Search for subdivided subject headings

- String search or keyword search to find a qualifying word or phrase enclosed in parentheses in subject headings

Library staffs need to develop local procedures for verifying references and editing them with posted subdivisions and/or subject headings in their catalog. In the previous example, staff members searching the local catalog may find that the term "Islam" is posted when it is a qualifier in subject headings but is not posted as a subdivision; consequently, two of the three references would be blind references if the original general *see also* reference were displayed to online catalog searchers. The staff would have to delete the reference to "Islam" as a subdivision and the example subject heading "Mysticism—Islam" in the original general *see also* reference to make that reference consistent with bibliographic records in the local online catalog. If the staff had found that the subdivision "Islam" was posted in the catalog but not the example heading "Mysticism—Islam," they would have had to replace the example heading with one posted in the local catalog. Staff members need editing capabilities to enable them to change and/or delete references and explanatory text in general references and scope notes.

Automation can be used for some but not all procedures for reviewing references. An automated system can retrieve LCSH-mr records with general references and scope notes. The library staff then could distinguish among the types of reference(s) cited, e.g., subdivisions, unsubdivided headings, qualifying word(s) in headings, to determine whether the type(s) at hand are posted in the local catalog. If example headings are not posted in the local catalog, staff members have to find comparable headings that are posted. Lastly, they have to edit the original headings and explanatory text to make them consistent with bibliographic records in the local online catalog.

MAINTAINING REFERENCES IN BIBLIOGRAPHIC SYSTEMS

Manual review and verification of references in general *see* and *see also* references (MARC tags 260 and 360) and scope notes (MARC tag 680) do not take place once, i.e., when libraries first incorporate LCSH-mr in their online systems. New authority records are regularly issued by LC and before they can be added to libraries' catalogs, staff members have to verify references manually in general *see* references (MARC tag 260), general *see also* references (MARC tag 360), and/or scope notes (MARC tag 680). Before updated records issued by LC can replace authority records in a library's catalog, the local system has to bring updated records with general references and scope notes to the attention of the staff, who then have to verify references in these fields. References in cancelled records issued by LC also need to be verified and necessary changes made to records affected by cancellations.

Estimates of the numbers of references made in general *see* and *see also* references and scope notes given in this paper are based on the entire file of LCSH-mr records. In some integrated library systems,only those LCSH-mr records for headings posted in the local catalog have been added. Thus, estimates of references given in this paper would be greater than the actual number of references that need verification in such libraries' online systems.

Unfortunately, the verification process cannot be automated totally. The staff can enlist automated system capabilities to find LCSH-mr records with general references and scope notes, search for referenced subject headings and subject heading components, and edit references and explanatory text. However, considerable effort is required from the library staff to verify references when LCSH-mr is first integrated into a local library system. The effort continues with verification of references in new, changed, and deleted records issued by LC. If references are not verified, patrons pursuing such references are going to be led down blind alleys. In the case of such references, the online catalog will not be much of an improvement over card catalog searching, in which patrons are also led down blind alleys when consulting references and established headings in the printed *LCSH* that are not posted in the card catalog.

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LRTS' Subsection

High-Tech Shopping for Serials Automation: Linking Public and Technical Services

Pamela Bluh and Will Hepfer, Editors

This is the third of four papers comprising this subsection of *LRTS.* The papers were originally presented at the RTSD Serials Section program on June 27, 1987, in San Francisco, California.

In keeping with the nature of its subject, ''High-Tech Shopping for Serials Automation: Linking Public and Technical Services'' is being published serially; two papers have appeared in the April and October issues, the third is in this issue, and the fourth will be in a subsequent issue of *LRTS.* We hope you will find them as illuminating as their San Francisco audience did.

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Hardware Considerations for Automated Serials Systems

James E. Rush

Four main classes of hardware, all equally important, need to be considered when planning an automated serials system: central computer system(s), mass storage, input/output devices, and communication. This article examines criteria and suggests guidelines for their implementation.

In planning for successful serials automation, four main classes of hardware, all equally important, need to be considered: central computer system(s), mass storage, input/output devices, and communication.

CENTRAL COMPUTER SYSTEM HARDWARE

Central computer system hardware includes the actual computer processing unit and memory, as well as channels and direct memory access ports that permit peripheral devices to be attached to the computer. Although these hardware components are important for efficient, effective serials automation, it is the software that dictates the choice of a central computer system, not the reverse.

Among the important characteristics of computer systems that affect the success of serials automation, as with any other computer-based process, are processor speed and memory capacity. Processor speed is important with respect to response time and throughput. Response time refers to the time required for a computer system to perform a process requested by the user, from the moment the user issues the request until the system displays a response on the user's display device. Response time may vary due to the complexity of the user's request, because of the number of simultaneous users of the system, and as a result of the manner in which mass storage is employed in the system.

Throughput is a measure of the number of correct transactions a computer system can process per unit of time. This measure is more important than response time because it relates to the total volume of work performed by the system, hence by staff, whereas response time relates to the speed with which a system can process a given transaction. Throughput is the result of the interplay of a number of variables and depends upon the way the overall serials system has been designed.

Memory capacity is also an important determinant of serials system performance. Other things being equal, the more memory the computer system supports, the more efficiently the serials system will perform. The software, however, rather than the hardware, generally determines performance relative to memory capacity. Some serials systems are designed to work on relatively small computers and are designed with small memory capacities in mind. A system with larger memory capacity may not be sig-

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nificant if the software does not take advantage of the additional memory. In multiuser environments, where both software and data may need to reside in memory, it is especially important. The trade-off between memory-resident software and data on the one hand and disk-oriented processing on the other is the time required to swap programs and data in and out of the processor and from and to disk storage compared with the total amount of memory needed. Since memory is now quite inexpensive, software developers tend to design software to utilize a large amount of memory.

MASS STORAGE

Since serials control requires both bibliographic data and holdings data, mass storage is a critical factor in determining whether a specific serials system is suitable for a particular library and needs to be addressed before the question of system performance can be considered. Mass storage is divided into disk storage and tape storage.

Four classes of disk storage can be utilized in routine serials processing work, either alone or in combination, to store serials bibliographic and holdings data: magnetic or optical flexible diskette and magnetic or optical rigid disk. Either fixed or removable media may be used, the former being more often associated with rigid magnetic disk.

In general, there are three factors to consider relative to disk storage: capacity, speed, and cost. Capacity is measured in either kilobytes (KB—1 KB = 1,024 bytes) or megabytes (MB—1 MB = 1,024,000 bytes). Capacity is related to the density of data recorded on the medium, both in terms of the number of bits per lineal inch and in terms of the number of bits per radial inch. Since data is recorded on disk either in a circular or a spiral fashion, one speaks of the data as being recorded in tracks, either concentric circular tracks or single continuous spiral tracks. The lineal recording density (the number of bits per track) depends on whether the disk drive operates at constant linear velocity (CLV) or at constant angular velocity, (CAV). Most magnetic disk drives operate at constant angular velocity, which means the disk turns at a constant speed, such as 3,600 rpm, regardless of the track on which data is recorded. This gives rise to higher density lineal recording on the inner tracks of the disk than on the outer ones. Some magnetic disk drives and a majority of optical disk drives operate at constant linear velocity, which means that the rotational speed varies so that the disk moves more slowly for outer tracks than it does for inner ones. This results in more efficient use of the storage medium, but necessitates more complex hardware.

Speed of disk storage is a combination of several factors, among them seek time, latency, and data transfer rate. Seek time refers to the time required to position the read/write heads on the track containing the desired data or on which the data will be written. Seek time is directly related to the capability of the motor to move the mechanism containing the read/write heads and to position the heads precisely. Latency refers to the time required for the beginning of a track to come under the read/write heads once the proper track has been located. Latency is directly related to rotation speed. Data transfer rate refers to the speed with which data can be transferred to or from the disk drive to the central computer system. Some flexible diskette drives and a number of optical disk drives transfer data at a rate on the order of 150 KB/second, while many rigid disk drives achieve data transfer rates of more than 1 MB/second. Data transfer rates are determined by a number of factors, of which the capacity of the data path is quite important. For instance, byte parallel transfer moves data along eight parallel paths, while word parallel transfer moves data along sixteen or thirty-two parallel paths simultaneously. The design of the disk controller, the use of cache memory in the computer, seek look ahead, and other techniques can increase speed of disk storage, but the way the software makes use of the storage is important. Magnetic disk storage is typically faster than optical disk storage but of considerably lower capacity.

The cost of disk storage varies with the type of storage unit considered but can be expected to fall in the range of $.75 for flexible magnetic diskette to $.03 for rigid disk to $.001 for optical disk for each kilobyte of storage.

For stand-alone serials systems, the amount of disk storage required will be approximately three times the number of titles, in megabytes (MB). Thus, for a serials collection of 12,000 titles, total disk storage requirements can be expected to be approximately 36 MB.

Whereas disk storage supports online databases, tape storage serves for backup, recovery, and transfer of data between a serials system and such other systems as bibliographic services. For microcomputer-based serials systems, a cartridge tape unit with a 60–80 MB capacity should suffice for most needs, although the smallest systems should be able to manage with flexible diskettes for archival purposes. For larger systems, a reel-to-reel tape drive is needed, both because of capacity and speed. Tape drives are fairly costly, ranging in price from $1,000 for a cartridge tape drive to as much as $25,000 for a high-speed, reel-to-reel tape drive.

INPUT/ OUTPUT DEVICES

Aside from mass storage devices, two input/output (I/O) devices are of importance in serials processing: printers and bar-code readers. The purpose and value of printers is obvious: reports, claims, orders, notices, and other printed materials require a printer for their production. A good dot-matrix printer should be sufficient for small to medium-size systems. For larger systems, a band printer or a medium duty chain printer is preferred both for speed and durability. Laser printers, while providing high-quality output, are slow and not suited to the kinds of printing needed in serials control.

Bar-code readers, either hand-held or stationary, are useful in serials systems for two reasons. First, they can be used to track serial issues through various stages of processing, from mail room to shelves. Second, and more important, they will likely become crucial for reading the bar-coded identifiers affixed during the publishing process. Use of a bar-code reader will greatly facilitate issue check in, both in terms of accuracy of recording data and in terms of staff efficiency. At present, serials systems generally do not support bar-code readers (Faxon's MicroLinx is one exception), but many will likely do so as the bar-coded serials identifier becomes more prevalent.

COMMUNICATION

The last hardware class to be considered is that required for communication among central computer systems and terminals or among computer systems themselves. For mini- and maxicomputer-based serials systems, the hardware required for communication will consist of modems of various capabilities and a communication medium such as wire or fiber optics. For microcomputer-based systems, communication hardware may not be needed, but, if it is, it too will consist of modems and a communication medium, or of local area network hardware such as medium access units, and the communication medium.

Several types of communication hardware are available. Terminals that share a single central computer system may be linked to the system without modems if the length of the communication medium is less than 20–30 meters. For greater distances, some type of modem will be required, although for distances under one mile, modems need not be very sophisticated.

If a serials system is linked to a vendor system such as EBSCO, a long-distance modem supporting communication speeds of up to 2,400 bits per second (bps) will be required. This modem can be used to access vendors' databases and to submit subscription orders, renewals, and claims; it can also receive from the vendor pertinent data regarding available titles and the status of outstanding subscriptions.

Serials systems of modest size may be served by a local area network. In such a network, a micro- or minicomputer of appropriate capacity is designated as the file server and other microcomputers connected to the network function as applications processors. A local area network provides for multiuser capabilities similar to those of larger systems but at a lower cost. Local area networks succeed, however, only if the software that implements the desired function, in this case serials control, is designed for multiuser operation.

CONCLUSION

When considering an automated serials system, four major categories of hardware must be evaluated. The choice of software, however, should precede choice of hardware. The hardware configuration will depend upon the design of the software and upon the specific needs of the library. Generally, a serials system vendor can aid the library in selecting the most appropriate system both in terms of software and hardware. If more objective advice is required, a consultant may be engaged to analyze library needs and to recommend a particular combination of software and hardware to meet those needs.

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1988 Annual Reports

RTSD Annual Report

At the close of the 1987–1988 year, the Resources and Technical Services Division numbered 6,037 members, with more than 500 actively participating in 165 working groups. The office is now fully staffed with Executive Director Karen Muller, Program Officer JoAnn King, Darryl T. Howell, and Yvonne McLean. Financially, the division ends the year without a deficit—a dramatic surge upward from the $60,642 deficit in August 1987.

The primary segments of RTSD are the Directors Board, five sections, and the Council of Regional Groups. At the division level, there are seventeen committees, five task forces, and nine discussion groups. Below are some highlights of RTSD work accomplished during the 1987–1988 year. For additional detail, consult the section annual reports, which follow, and the article on RTSD that will appear in the 1989 *ALA Yearbook*. (Two more section reports will appear in the next issue.)

- RTSD provided continuing education opportunities through four regional institutes, two preconferences, and eight programs during the Annual Conference in New Orleans.
- Publication landmarks included the appearance of two new titles, the approval of four additional titles for publication, and the continuation of *LRTS* and the *RTSD Newsletter*. Some pages that had been cut last year from both division organs were restored this year.
- Planning efforts included a strategic long-range planning (SLRP) session during Midwinter and the subsequent creation of a SLRP task force, the Planning and Research Committee review of division-level discussion groups, and the appointment of a task force to develop guidelines for institute and preconference planning.
- The Directors Board of RTSD supplied ALA Executive Director Thomas J. Galvin with comment on two draft proposals for the revised operating agreement among partners to *AACR* discussed at the meetings of the *AACR* principals held in conjunction with both the 1987 and the 1988 IFLA conferences.
- Five RTSD members were honored at the awards ceremonies during the annual membership meeting. Details and pictures appear elsewhere in this issue of *LRTS*.
- The blue ribbon Task Force on the Economics of Access to Information, chaired by Robert Wedgeworth, Dean of the School of Library Service at Columbia University, deliberated on serials pricing issues in New Orleans and will continue with hearings during Midwinter 1989.
- In New Orleans the Directors Board authorized creation of a task force to develop national guidelines for the bibliographic control of master microform catalog records.

I appreciate the opportunity to work with you as your president during 1987–1988. It has been a year of accomplishment for RTSD due to your interest, contributions, and dedication. Thank you very much.—*Marion T. Reid, President, 1987–88.*

Cataloging and Classification Section Annual Report

CCS EXECUTIVE COMMITTEE

The CCS Executive Committee established the Committee on Education, Training, and Recruitment for Cataloging as the outgrowth of its ad hoc task force on the same issue. One of the committee's first concerns will be to promote communication between catalogers and library educators as a means of recruiting talented library school students into cataloging. The Executive Committee voted to follow the divisional model for committee review by assigning the task to the CCS Policy and Research Committee.

CCS had no difficulty finding candidates for Executive Committee positions nor did it lack volunteers to serve on its committees. The Executive Committee reaffirmed its position that committee chairs decide whether to appoint interns. The Executive Committee nominated candidates to the IFLA standing committees on Bibliography, Cataloguing, and Classification and Indexing.

The Executive Committee forwarded to the RTSD councilor evidence that the section has not been unresponsive to the needs of public library users. It also expressed concern about the negotiation of *AACR2* agreements at the international level and about changes to the MARC format in the title area, with serious implications for description and access.

CCS COMMITTEES AND DISCUSSION GROUPS

The Committee on Cataloging: Asian and African Materials proposed modifying the rules for qualifying Malaysian place names and will seek approval for an optional extension of geographic area codes for Malaysian and Indonesian place names.

The Committee on Cataloging: Description and Access spent much of its time on final preparations for the 1988 revision of *AACR2*. CC:DA also reviewed several proposed ISBD and NISO standards and began studying potential *AACR2* revisions on the use of brackets and headings for multidenominational creeds.

The Cataloging of Children's Materials Committee completed revising *Cataloging Correctly for Kids*, scheduled for publication soon.

The Margaret Mann Citation Committee selected Ben Tucker of the Library of Congress in recognition of his contributions to descriptive cataloging.

The Policy and Research Committee reviewed the charge of the Committee on Education, Training, and Recruitment for Cataloging and agreed to review CCS committees.

The Subject Analysis Committee debated the need for a subject code, discussed possible development of a USMARC format for classification, and identified problems with the Library of Congress' policy of separate authority files for name and subject headings. Four SAC subcommittees continued their work on specific issues though no final reports appeared this year.

The five CCS discussion groups proved their worth by reaching out to large numbers of conference attendees. A wise choice of discussion topics coupled with effective publicity led to average attendances of well over 100 people per session.

Programs and Institutes

The CCS program "*AACR2 Revised*: Past, Present, and Future" was an enormous success at the New Orleans Annual Conference. A standing-room-only crowd of 800 heard Richard Smiraglia, Olivia Madison, and Michael Gorman speak on the revision process, major changes, and predictions for the 1990s. In March 1988, the Classification Institute in Boston achieved financial success with its eighty registrants. Future plans include an institute on *AACR2 Revised* and a 1989 preconference on the twentieth edition of the *Dewey Decimal Classification.—Robert P. Holley, Chair, 1987–88.*

Council of Regional Groups Annual Report

Council of Regional Groups officers participated in the RTSD Strategic Long-Range Planning meeting in January 1987. At this meeting, the following CRG goals were identified: (1) strengthen the organizational relationships between state and regional associations and RTSD; (2) review the role of the *CRG Newsletter*; (3) explore the feasibility of providing some funding from RTSD for state and local association programs; (4) continue to serve in the role of information exchange and active assistance between RTSD and its state and regional affiliates; (5) propose an RTSD CRG Executive Committee and an increase in the number of representatives to RTSD committees; and (6) explore the possibilities for CRG programming at annual conferences.

We have achieved some of these goals. We have proposed changes to the CRG organizational structure that would, if adopted, better enable CRG to accomplish its objectives. Until the new organizational structure is approved, however, CRG officers remain as CRG representatives on various RTSD committees (e.g., the RTSD Membership Committee) and participate in committee activities. CRG coordinated staffing of the RTSD booth at the Public Library Association 1988 Conference in Pittsburgh.

Annually, CRG sends information packets to the chairs of the state and regional affiliate organizations, which include information about RTSD goals, RTSD officers willing to speak at state and regional conferences, and a directory of state and regional chairpersons. One of the greatest challenges is keeping up with changes in state officers; therefore, we are now including a form on which RTSD affiliates can report the names of new officers. Also, we are sending the CRG directory to RTSD section chairs.

To publicize the activities of RTSD CRG affiliates, we initiated a new column in the *RTSD Newsletter* titled "Council of Regional Groups." The *CRG Newsletter* continues to be an important means of communication between RTSD and its affiliates. It provides information on CRG conference meetings, agendas, and RTSD Board activities relating directly to CRG. Chairpersons of the state and regional associations comprise the audience for the *CRG Newsletter*, while the information in the *RTSD Newsletter* is intended to furnish all RTSD members with news of state activities.

The RTSD state and regional affiliates continued to provide a broad array of programs for their members on such topics as CD-ROM, authority control, and the impact of library automation on library organization. Two state associations, the Texas Library Association Acquisitions and Collection Development Roundtable and the Northern California Technical Processes Group, worked with RTSD to hold regional institutes in their respective states on the business of acquisitions. These joint efforts represent a new era in cooperative planning and program implementation between RTSD and state organizations. Both institutes were successful financially as well as programmatically, indicating a bright future for more cooperative ventures.—*Jennifer Younger, Chair, 1986–88.*

Reproduction of Library Materials Section Annual Report

This past year, ALA members working within key RTSD/RLMS committees continued to share their expertise in library micrographics and reprography, which the section has traditionally provided, and to move in a concerted and cooperative fashion toward resolving lingering problems in microform production and service. Each committee's mission and organization was reassessed to assure that changing needs will be met, particularly as they relate to preservation microfilming, the use of electronic reprographic technologies, and library photocopying. RLMS committees were highly productive due to the strong and creative leadership demonstrated by RLMS committee chairs. Their fine work has prompted increased interest in the section, revitalized the outlook of current participants, and resulted in consistently substantive and well-attended meetings.

The Standards Committee (Myron Chace, chair) continued to serve as the focus for reports on micrographics standards from AIIM, ISO, and NISO and plans to take a more active part in standards writing and review by building strong liaison relationships with standards making bodies outside and within ALA. The Bibliographic Control of Microforms Committee (Shirley Leung, chair) has expanded its area of concern from microform service copy cataloging to considering the full range of issues in access to and control of microforms, including the cataloging of preservation master microforms and standards for guides to microform sets. Task forces were formed with the aim of developing national standards in these areas.

The most successful RTSD institute to date, "Preservation Microfilming: Production and Planning" (held at Yale University, April 21–23), was sponsored by RLMS through its Regional Programs Committee (Tamara Swora, chair) and planned by a subcommittee chaired by Sherry Byrne. Another subcommittee, working with the RLMS Copying Committee, is planning a preconference on technical, public service, and legal issues in library photocopying, areas important to all libraries (Wes Boomgaarden, chair). The Copying Committee also completed extensive surveys on the use of alkaline paper in photocopiers and desirable features for public copiers. Guidelines were developed with RASD for packaging of library microforms through interlibrary loan. The RLMS Discussion Group also concentrated on library photocopying, with highly informative sessions on edge copiers and preservation photocopying. The RLMS Annual Conference Program carried this further with a discussion of copyright, "U.S. Copyright in Libraries: Clarifying the Present and Preparing for the Future." Continuing problems and future issues in electronic information distribution were thoughtfully delineated by Kenneth Crews (UCLA), Marybeth Peters (U.S. Copyright Office), and John Garrett (Copyright Clearance Center).

Renewed interest in RLMS has been sparked by its Public Service Managers of Microform Facilities Discussion Group (Karen Sinkule, chair). These meetings serve as a unique forum for a broad spectrum of librarians who have responsibilities in microform storage and access. They share information and experience in such areas as microform facilities design and microform reference. Another unique forum was sponsored by the section at the New Orleans Conference, the "RTSD (RLMS) Forum on Preservation Microfiche." RLMS worked with the RTSD Preservation Microfilming Committee to bring together parties interested in resolving issues related to use of microfiche as a preservation format. A subcommittee of RLMS Standards was formed to review or revise appropriate standards with other standards groups.

The Policy and Research Committee (Nancy Elkington, chair) undertook a full-scale review of the organization and work of the section so that future needs of libraries in reprography can be effectively filled by RLMS. The first outcome of this review process was a change in name and direction for the former RLMS Technology Committee. The committee is now the RLMS Electronic Imaging Technology Committee whose task is to facilitate the development and assist in the implementation of electronic imaging technologies for the reproduction of library materials. The Publications Committee (Maryanne Ferrarese, chair) is also looking toward the development of new section publications while considering the revision of existing materials.

With such varied and important activities, RLMS as a section and as a group of devoted and energetic colleagues has demonstrated a renewed spirit, which has been highly rewarding for all of us.—*Tamara Swora, Chair, 1987–88.*

Serials Section Annual Report

During the 1987–1988 year, the Serials Section focused on clarifying the work of several of its standing committees as well as on presenting lively programs dealing with such issues as serials pricing, new technologies, and the MARC holdings format.

Continuing its review of section committees begun in 1987, the Executive Committee approved the merger of the Library Education Committee with the Regional Serials Workshop Committee to form the Education Committee. The charge of the new committee will be broadened to include all aspects of continuing education as well as library science curricula. In addition, the Committee to Study Serials Records was renamed the Committee on Serials Standards and will be given a new charge. Its task will be to monitor the development, review, and implementation of standards related to serials.

"Linking Technologies: Serials Systems and their Links to Other Systems," the section program at the New Orleans Annual Conference, was attended by about 250 individuals. Ann Okerson chaired the program committee and the speakers included Tom Delsey, National Library of Canada; Julia Blixrud, Library of Congress; Greg Anderson, University of Georgia; Bill Gosling, University of Michigan; Howard F. McGinn, North Carolina State Library; and Steve Silberstein, Innovative Interfaces. In a spirit of cooperation, the section also cosponsored another program on the budget crisis with the Resources Section, "Trends and Tools: Managing the Crisis in the Library Materials Budget." The Research Libraries Discussion Group devoted time to subscription cancellations and serials pricing issues, while the LITA/RTSD Serials Automation Interest Group presented a forum on implementing the MARC holdings format for serials.

The section produced one publication this year, "Directory of Union Lists of Serials," which was prepared by the Committee on Union Lists of Serials (Mark Kovacic, chair) and appeared in *Serials Review* 14, no.1–2, 1988. The Acquisitions Committee is developing some work on evaluation of vendors for future publication, and the new Committee on Serials Standards is planning to publish the results of its survey on standards use.

Marjorie Bloss of OCLC was awarded the Bowker/Ulrich's Serials Librarianship Award in recognition of her outstanding achievements in the area of union lists. The selection committee was chaired by Charlotta Hensley.

Thanks are due to the members of this year's Executive Committee: Alex Bloss, vice-chair/chair-elect; Marlene Sue Heroux, past-chair; Julia Blixrud, secretary; John Riemer, chair of Policy and Research; Linda Sapp Visk, Doris Anne Bradley, and Mary Ellen Clapper, members-at-large; and Minna Saxe, LRTS section editor. The committee was saddened by the untimely death of Mary Ellen Clapper in May 1988, and a resolution citing her contributions to the profession was endorsed by the section committee and by the RTSD Board of Directors. The board members are too numerous to mention individually, but a big vote of thanks is also in order for all the other section committee chairs who gave willingly of their time and efforts to further the programs and work of the Serials Section.

The year ahead should be a challenging one under Alex Bloss' leadership. With all the new developments in serials automation and serials pricing, the Serials Section will continue to be a center for discussion, support, and coordinated action for all librarians concerned with serials matters.—*Jean W. Farrington, Chair, 1987–88.*

Decimal Classification Editorial Policy Committee Annual Report: July 1, 1987—June 30, 1988

The 93d and 94th meetings of the Decimal Classification Editorial Policy Committee (DCEPC) were held at the Library of Congress (LC) on November 4–6, 1987, and February 29 through March 1, 1988. The November meeting was extended to three days because of the large number of revised tables and schedules, the extensive index, and the front matter submitted by the editorial office to DCEPC for review in preparation for Edition 20 of the Dewey Decimal Classification (DDC); the February meeting took place over a normal two-day period.

At the November meeting, the committee noted with great pleasure the award of the John Ames Humphry/Forest Press Award for a Significant Contribution to International Librarianship to Benjamin A. Custer, editor of DDC from 1965 to 1980. Also, a luncheon was hosted by the Decimal Classification Division (DCD) in honor of the retirement of Melba Adams, assistant chief of DCD. DCEPC participated in the celebration.

Discussions and actions during the November 1987 meeting:

1. *Committee Business*

   Lois Mai Chan was reelected as chairperson of DCEPC for a second two-year term, beginning in January 1988.

2. *Draft Tables and Schedules for Edition 20*

   A. After thorough examination and lengthy deliberation by DCEPC members, the following schedules were approved for incorporation in Edition 20 with minor adjustments and subject to editorial refinement:

100–120, 140, 180–190	Philosophy
130	Paranormal phenomena
150	Psychology
340	Law
360–365	Social welfare
540	Chemistry
550	Earth sciences
570	Life sciences
580	Botanical sciences
620–624, 627–629	Engineering

630	Agriculture
640	Home economics
660	Chemical technology
670–680	Manufactures
690	Buildings
700–770	The arts

B. The following tables and schedules, approved in principle at earlier meetings contingent upon further revisions, were reviewed again and approved by the committee:

Table 1	Standard subdivisions
Table 2	Areas
Table 5	Racial, ethnic, national groups
Table 6	Languages
900	History

3. *Index*
   The committee discussed indexing policy questions at considerable length. Members agreed that the index should include appropriate subject terms from the schedules, augmented by terms from outside sources, and that terms from the schedules should not be excluded simply because there is little literary warrant. Edition 20 will include an introduction to the index explaining the indexing policy and giving instructions on how to use the index.
4. *Introduction*
   A draft introduction for Edition 20 was presented to DCEPC for comment. The committee felt that the introduction's audience should encompass beginners, students, professionals who regard themselves as "non-classifiers," and classifiers. The previously separately published *Manual on the Use of the Dewey Decimal Classification Edition 19* will be included in Edition 20 as part of the set. As a result, duplications found in the *Manual*, the *Introduction*, and schedule notes will be eliminated.
5. *Abridged Edition 12*
   A recommendation made by the ALA/RTSD/CCS Ad Hoc Committee on Abridged Edition 12 of DDC to eliminate table 1 (Standard Subdivisions) from the abridged edition of DDC was considered. DCEPC decided to postpone action until after the publication of Edition 12 because of the amount of time it would take to study the ramifications of such a decision and to solicit opinions from a broader spectrum of users.

At the February 1988 meeting, the committee received with pleasure the news that Joel Downing, formerly of the British Library and former Library Association representative on DCEPC, would be the 1988 recipient of the John Humphry/Forest Press International Award.

Discussions and actions taken at this meeting include the following:

1. *Draft Tables and Schedules for Edition 20*
   Before this meeting, DCEPC completed the review of the tables and schedules for all classes. Miscellaneous items from various schedules were brought back at this meeting because of questions raised at earlier meetings or problems occurring in the process of integrating the schedules or preparing the index. These were discussed and resolved. Among the actions taken was the decision to include the extended notes for completely revised 780 (Music) in the *Manual*. Other matters included numbers relating to Palestinian Arabs in table 5 and parts of table 7 (Persons).
2. *Index*
   Questions discussed regarding the index included sources of index terms, display of index entries, cross-references, and the indexing of synthesized

numbers. The draft introduction to the index was reviewed by the committee, and suggestions were made for its improvement.

3. *Introduction*
   A revised draft of the introduction was discussed by the committee. Considerations were given to matters relating to its intended audience, content, and organization; and suggestions were made for amendment or improvement.
4. *EPC Preface*
   The EPC preface to Edition 20 prepared jointly by the current and former chairpersons who participated in the preparation of Edition 20 was reviewed by the committee with amendments and corrections.
5. *Abridged Edition 12*
   Work on Abridged Edition 12 will begin upon the completion of Edition 20. The committee agreed to review the entire schedules and index, even though during the review of Edition 20 the committee had already considered the point at which each number would be abridged. It was estimated that two DCEPC meetings were needed to review draft tables and schedules for Abridged Edition 12.

The next DCEPC meeting will be held in Albany, New York, in November 1988 in conjunction with the International Conference on Classification Theory in the Computer Age, sponsored by the School of Information Science and Policy, University at Albany, State University of New York, and the Forest Press.—*Lois Mai Chan, Chair*

Annual reports from the Preservation of Library Materials Section and Resources Section will appear in the next issue.—Editor.

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Join the Celebration in Cincinnati

It seems like only yesterday that a group of librarians founded the College Library Section of the American Library Association. But that was back in 1889 and it's just about time to celebrate the first century of academic librarianship.

The celebration begins at the ACRL Fifth National Conference, April 5-8, 1989 in Cincinnati, Ohio. The program features major speakers from higher education, technology and publishing. The best in library research will be presented by over 50 contributed paper authors. Panel presentations, small group discussions, poster sessions, exhibits and preconferences round out the conference.

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The second century of academic librarianship begins in Cincinnati on April 5, 1989.

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BUILDING ON THE
FIRST CENTURY

1988 Division/Section Awards

Esther J. Piercy Award, 1988
Karen Markey

From left to right, Marion T. Reid, president of RTSD; Karen Markey, award recipient; and D. Whitney Coe, 1988 committee chair.

The last ten years of library history would not be the same if Karen Markey had continued to pursue her education in art history. In that brief time she has provided us all with some very useful tools—comprehensive bibliographies on catalog use studies and the process of subject searching in the library catalog; annual reviews of subject access literature; an online training manual for the ERIC database; a groundbreaking study on subject access to visual resources collections; and a landmark research project on the Dewey Decimal Classification online. From the time she was a master's student, research assistant, and doctoral student at Syracuse University School of Information Studies, through her time at OCLC's research department, and continuing into her few years as a library educator at the University of Michigan School of Information and Library Studies, she has kept her attention on the online revolution in libraries. She has pursued that interest almost ferociously, attacking the topic from several points of view—from the point of view of the trained or untrained user, of the reference librarian and other library staff, of the system designer, and of the trainer of online users. All of her writings and speeches have a critical, analytic tone, but she never disparages the work of others. Instead she suggests, demonstrates, outlines, and draws attention to needed changes.

As a result of her work, from her student days onward, we can see the mark she has left on those engaged in online systems in libraries. Because of her pivotal role as a research scientist at OCLC, she was able to work on the monumental, CLR-funded Online Public Access Catalog Evaluation Project in 1982, and she mined the data from the reports associated with that project to reach various audiences who had only a peripheral role to play at the time of the project but who now direct the online developments at several libraries. She followed up some of the study's recommendations and continues to devise research projects to carry forward developments in that field. Few people in librarianship are as steadfast in their research interests, and for this, Karen is to be commended and rightfully rewarded. Esther J. Piercy would have been proud of this year's winner. She greeted the new and the young in technical services with delight; in Karen Markey she would have taken special delight. I know I did when I heard her ask "Why can't we do better than that?" in the online searching class I was teaching at Syracuse in 1977. We have continued asking questions together since that time. As a research assistant, student, and colleague, she has constantly stimulated and assisted me as she has others who continue to ask "Why can't we do better than that?"—*Pauline A. Cochrane, for the committee.*

Margaret Mann Citation, 1988
Ben R. Tucker

From left to right, Michael Fitzgerald, 1988 committee chair; Ben R. Tucker, award recipient; and Robert P. Holley, Cataloging and Classification chair.

Ask catalogers what librarian personifies descriptive cataloging and most will name Ben Tucker, this year's recipient of the Margaret Mann Citation. As a cataloger at the Library of Congress and as its chief for descriptive cataloging policy, Ben was an integral part of the implementation of the first edition of the *Anglo-American Cataloging Rules* and the development and implementation of the second edition. His influence extended far beyond these intellectual activities, however, for he has been a preeminent spokesperson, representative, and mediator for the Library of Congress in descriptive cataloging matters; and a guide, teacher, and friend to hundreds of catalogers at LC and in the library community at large.

Ben came to the library as an intern in 1959 with a degree in classics from Birmingham-Southern College and a master's in library science from the University of North Carolina. After one year's experience on a bookmobile and a stint in the reference room at UNC, Ben fully expected to work as a reference librarian, but his experiences with the joys of original cataloging plus the rigors of working in LC's main reading room during the Christmas rush redirected his interest. He joined the LC Romance Languages Unit of the Descriptive Cataloging Division where he quickly became absorbed in the intricacies of bibliographic description. Ben is fond of telling how he and another young cataloger wisely decided that series were not important enough to justify all the trouble they caused, so they went to Principal Descriptive Cataloger Olivia Faulkner to propose that they be dropped from cataloging. Alas, she didn't accept their suggestion.

In 1962, Ben was transferred to the newly created South Asian Languages Section (SALS) to help train its staff. When it was decided that SALS would handle serials, he was detailed to the Serials Section. Eventually he became SALS' cataloging expert and in 1966 was named assistant head. In 1964, he took his first trip outside the U.S., a vacation in India.

In 1967, Ben was named to join Principal Descriptive Cataloger Marion Schild and Paul Winkler in presiding over the introduction of the new *Anglo-American Cataloging Rules.* Because of superimposition, the impact was minimal, and no formal training was given. Ben stayed on to assist the principal cataloger after Paul Winkler was named to that position in 1968. As Diane Humes recalls, "Ben was very helpful to those of us who were too timid to approach the great principal cataloger himself. He was always approachable, and would gladly come to the cataloging section so that catalogers as well as section heads would be able to ask questions and hear the answers."

Formal documentation of LC descriptive cataloging decisions and practices began then—now the *Library of Congress Rule Interpretations* and *Descriptive Cataloging Manual.* As Ben tells it, they got started in 1968 because the assistant chief of shared cataloging demanded that Paul Winkler begin writing down and distributing some of the ad hoc decisions he was making. Ben did the writing, and various types of documentation ranging from memos containing miscellaneous advice to flowcharts of more complicated routines began coming to the cataloging staff. The documentation gradually became more formal, and when the distribution of MARC bibliographic and authority records provoked interest outside LC, the information was published in the LC *Cataloging Service Bulletin.*

In 1974 when Paul Winkler became an editor of the projected second edition of *Anglo-American Cataloging Rules,* Ben was appointed acting principal descriptive cataloger. In this position he supervised the introduction of the revised chapter six for bibliographic description, which created more stir among catalogers than *AACR1* because it introduced the controversial ISBD punctuation. The Kansas Library Association had a program on the new rules, and Ben was sent from LC to speak about them—the first of many engagements in which Ben explained LC policies and practices to other libraries. (Ben confessed he was terrified—it was a breakfast meeting and the sight of the fried eggs almost finished him off before he even gave his speech.) About this time, LC inaugurated its cataloging-in-person suite at ALA meetings. Since then, hundreds of catalogers have discussed cataloging problems with Ben directly. Ben's patience and enthusiasm have been major factors in encouraging other librarians to follow LC practices.

In 1976 Ben became the LC representative to the Joint Steering Committee for Revision of *AACR,* a position he still holds, and later LC Liaison to the Cataloging Committee: Description and Access. In 1979 he became chief of the new Office for Descriptive Cataloging Policy and from this eminence helped direct the implementation of *AACR2.* He and his office helped organize workshops and training sessions all over the U.S.

Since 1981, Ben has been in the forefront of descriptive cataloging activities. He was instrumental in working out argeements on the revision of *AACR2* chapter nine on computer files. He and his staff carried out much of the actual textual work of the recent revisions of the *International Standard Bibliographic Descriptions*. In addition, he played a major role in the final decisions on the nature of the changes included in the 1988 revision of *AACR2*.

The growth of library automation, network utilities, and cooperative cataloging have made LC and U.S. libraries interdependent in ways none could have expected. Agreement on cataloging rules and practices has become a sine qua non. Ben's fluency in writing, his ability to explain complex problems, his lack of rigidity in the application of cataloging rules, and his friendships with catalogers have been major factors in the development of the cooperative library environment in which we work today.—*Lucia J. Rather, for the committee.*

Resources Section—Blackwell North America Scholarship Award, 1988
Joe A. Hewitt and John Shipman

From left to right, William Z. Schenk, Resources Section chair; Sally Somers, 1988 committee chair; Joe A. Hewitt, award recipient; John S. Shipman, award recipient; and George E. Buchanan, Blackwell North America.

The Resources Section-Blackwell North America Scholarship Award for 1988 has been presented to Joe A. Hewitt and John Shipman for their publication "Cooperative Collection Development Among Research Libraries in the Age of Networking: Report of a Survey of ARL Libraries" published in *Advances in Library Automation and Networking*, volume 1, 1987. Presentation of the award was made at the RTSD membership meeting held July 9, 1988, in New Orleans. The Scholarship award of $1,000 from Blackwell North America, Inc., was presented to the School of Information and Library Science at the University of North Carolina-Chapel Hill.

Although cooperative collection development is a topic frequently discussed among collection development officers, Hewitt and Shipman could find little evidence to document current practices. To ascertain the level of formal cooperative programs, they surveyed ninety-three ARL libraries. Their well-researched article provides information about the nature and scope of current practices and suggests that while research libraries report a widespread acceptance of the "idea" of cooperative collection development, there are formidable problems to be faced and resolved before these programs can be fully accomplished.

Joe A. Hewitt is associate university librarian for technical services at the University of North Carolina–Chapel Hill. He received his master's degree in library science from the University of North Carolina–Chapel Hill and a Ph.D. in education from the University of Colorado at Boulder. Before moving to UNC, Hewitt held several professional positions at the University of Colorado, including head of the catalog department, head of the serials department, and head of the catalog maintenance department. Hewitt is active in the American Library Association and RTSD. He is chair-elect of the ALA Library Research Round Table Steering Committee, a member of the RTSD Technical Services Costs Committee, and chaired the RTSD Nominating Committee in 1985–86. He also has been active in the OCLC Users Council. He edits *Advances in Library Automation and Networking: A Research Annual* and has published in *Library Resources & Technical Services, Library Acquisitions: Practice and Theory, North Carolina Libraries, American Libraries, and College & Research Libraries.*

John S. Shipman is the university bibliographer and head of the collection development department at the University of North Carolina–Chapel Hill. He received his master's degree in library science from the University of California at Berkeley. His previous positions include acting chief bibliographer, social sciences bibliographer, and social sciences reference librarian, all at the University of North Carolina–Chapel Hill. Shipman is active in the American Library Association, RTSD, and the Librarians' Association at the University of North Carolina. In addition to this award-winning article, he has published in *Library Acquisitions: Practice and Theory.—Sally W. Somers, Chair.*

Serials Section Bowker/Ulrich's Serials Librarianship Award, 1988 Marjorie E. Bloss

From left to right, Leigh Yuster, R. R. Bowker Company; Ira Siegel, president of R. R. Bowker Company; Charlotta Hensley, 1988 committee chair; Marjorie E. Bloss, award recipient; and Jean W. Farrington, Serials Section chair.

Marjorie E. Bloss is the recipient of the 1988 RTSD Serials Section–Bowker/Ulrich's Serials Librarianship Award in recognition of her distinguished contributions to serials librarianship in the areas of holdings standards and union lists. The award was presented at the ALA Annual Conference in New Orleans on July 9.

Bloss has been the manager for resource sharing of OCLC's Marketing and User Services Division since December 1987. Her previous positions include assistant director for technical services at the Illinois Institute of Technology; project director for the Rochester Regional Library Council Union List of Serials; and head of technical services, head of the serials department, and serials cataloger at the Rochester Institute of Technology. She received a master's degree in library science from Case Western Reserve University.

Bloss is a leader in the development of serials holdings standards and union lists, gaining professional recognition for the importance of serials resource sharing through her presentations, publications, and involvement in national and international activities. She has presented papers about serials holdings statements, union lists, and serials in microformats at national and regional conferences. She has written fourteen monographs and articles about international and national standards development, union lists, and *AACR2*. Her professional contributions include membership on the IFLA Section on Serials Publications' Working Group on Union Catalogs of Serials, which resulted in a document about serials holdings statements to serve as the basis for an ISO standard; chairing the Serials Section Union List of Serials Committee (established as the result of her proposal), which published the RTSD *Guidelines for Union Lists of Serials* and *Directory of Union List of Serials;* chairing the ANSI/NISO Z39 Standards Committee V, Standard Data Elements for Identifying Information Organizations; and serving on the Editoral Board of the *Serials Review*.

The RTSD Serials Section–Bowker/Ulrich's Serials Librarianship Award is supported by R. R. Bowker Company with funding of $1,500 annually. It is awarded for "distinguished contributions to serials librarianship within the previous three years, demonstrated by such activities as leadership in serials related activities through participation in professional associations and/or library education programs, contributions to the body of serials literature, conduct of research in the area of serials, development of tools or methods to enhance access to or better management of serials, or other advances leading to better understanding of the field of serials." Marjorie E. Bloss has been dedicated to the advancement of serials librarianship throughout her career and is indeed a worthy recipient of the fourth award.—*Charlotta C. Hensley, Chair.*

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Resources & Technical Services News: The Library as Publisher

Cecilia Piccolo

The proliferation of microcomputer software and hardware for desktop publishing offers unique potential to libraries as its scope expands. Many of us are experimenting with library applications for these products. Beyond the word-processing and page-formatting features with which we are familiar, desktop publishing includes products that can be created using a growing set of related technologies. Specifically, microcomputer users now have access to tools designed to capture text and images, to organize databases of both text and images, and to record and store text and images on dense media that support sophisticated retrieval routines. If viewed in the broad sense, desktop publishing can be defined to encompass the production of optical disk and CD-ROM products at microcomputer workstations, including, with a few added steps, duplication and distribution of these dense media products. What applications can be developed by the library-as-publisher? Press releases for new products and services received at *LRTS* demonstrate that development of publishing-related technologies is an active area and that the ever-increasing speed and capacity of microcomputers places publishing activities near or within the grasp of many libraries. This column presents some product descriptions; I invite you to imagine applications appropriate to your setting.

The power of word processing has been discovered and exploited by libraries, especially for internal communication. Desktop publishing packages, which allow more sophisticated layout and design options, are expanding to exploit both the larger capacities and graphics capabilities of the "smarter" microcomputers available today. *Interleaf Publisher* is one such package, offering many automatic features such as index and table of content generation, cross-referencing, and multilevel numbering and outlining, together with unlimited document length. Running on the Apple Macintosh II, *Interleaf Publisher* can scan and alter drawings and photographs, including stretching and rotating the images. The package costs

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Cecilia Piccolo is Catalog Librarian at the University of Arizona, Tucson.

Note: this column is based on information from press releases furnished by product manufacturers and distributors. No attempt is made to be comprehensive, and mention is not an endorsement by *LRTS* or RTSD.

$2,495, and the complete installation—Mac II with 5 megabytes (MB) RAM and 40MB hard disk, laser printer, and one year's technical support—is listed at $16,500. Possible applications cited by Custom Computer Specialists, which market the product, are directories, manuals, and price books, examples chosen to emphasize that this system is designed to create much larger and more complex publications than the newsletters and brochures with which desktop publishing has traditionally been associated.

Standard desktop publishing packages take keyed-in text, perhaps add some graphics to illustrate it, and generate paper output. The capturing, organizing, and storing of data are components of the desktop publishing process being revolutionized by current technological developments.

CAPTURING

For microcomputers, one generally thinks of the keyboard as the primary means of capturing data. Compulink's *LaserFiche* system accepts text and graphics input via a whole range of methods: optical scanners, interfacing with mainframes for data transfer, modem- or fax board–based transporting of data or, yes, through the keyboard. This system uses optical disks as the storage device and offers keyword searching with proximity parameters, editing of retrieved text, and output via desktop laser printer, fax, or computer-to-computer interface. The *LaserFiche Series System Model 3000* uses a 32 bit processor and has 2MB of RAM, 340MB hard disks, an 800MB WORM optical disk, a 60MB streaming tape drive, an optical scanner, and a desktop laser printer. The list price for the system is $45,000.

Hewlett Packard offers the HP ScanJet desktop scanner, which accepts full-page images with 300 by 300 dots-per-inch resolution in under twenty seconds each. This scanner can be adapted to operate with IBM PC/XT, PC/AT, and PS/2 equipment and compatibles.

Compulink's LaserFiche 3000 Series System *uses an optical scanner to store both text and data on optical disks.*

Text-scanning devices operate either by character recognition or through recognition of sets of characters. TransImage Corporation's TransImage 1000, Version 1.1, contains a lexicon of 100,000 words, which can be augmented by the operator to include local lingo. The lexicon enhances the accuracy of this hand-held scanner by allowing it to correct single-character-recognition errors within words. TransImage 1000 reads typewritten, typeset, and near-letter-quality and laser printed materials and is designed for use with IBM PC/XT, PC/AT, and compatible computers. Data captured by the scanner can be read directly into a variety of popular word-processing, database-management, and spreadsheet software. It lists at $2,950.

ORGANIZING

Scanning text directly into a database management package provides one method of organizing data for effective retrieval. Other products using optical disks and CD-ROMs for storage promote the search speed and the ability of these devices to store complete and cross-referenced word indexes on the disk as an answer to database construction, indexing, and other time-intensive projects. Compulink's *LaserFiche* offers keyword searching on any document throughout the optical disk it employs for storage, enhanced by a variety of proximity ranges (same document, page, paragraph, or ten lines of text) for multiterm searches.

Impression, offered by Eyring, Inc., stores images on hard disk (using IBM PCs or compatibles) for direct access by library patrons. This system offers the development of multiple search keys, determined by the library, together with the option to enter text with each image stored on tape. This system makes it possible to create a database of visual materials and provide public access while protecting the materials from damage due to handling. The library produces a "product" of more than 1,000 5 by 7 images on 20MB of hard disk, making this package one that could be run by many libraries without acquiring additional hardware.

Organization is the focus of a CD-ROM production product created by Hewlett Packard, *HP LaserRETRIEVE.* This software package offers both database-building software that indexes and structures the data and user-interface software that permits searching by keyword, phrase, or through browsing a table of contents. Tags are inserted in the data as it is input from either printed or electronic sources. By reading these tags, the database-building software can assist in constructing and indexing the database. After proofing, a nine-track tape is produced that can be shipped to an appropriate vendor for mastering and duplication in CD-ROM format. The organization of the database and the retrieval software permit Boolean (AND/OR/NOT) search options, thesaurus displays, proximity searching, and hierarchical browsing. Both full-text and graphics documents are stored.

One of this vendor's goals is to generate more local production of CD-ROM products by providing a structure and user interface common to all products produced with this software by any user. The idea is that standardization of the structure and interface, possible through large-scale marketing by a major vendor such as HP, will permit small producers such as libraries to create and distribute products without having to develop a unique front end for each item.

HP LaserRETRIEVE uses HP or IBM personal computers with 640K RAM and requires disk storage capacity of twice the size of the database for the database-building software and 5MB of hard disk storage to run the user interface. The database-building software lists at $50,000 for a single license and the user interface at $500 for a single CPU license.

APPLICATIONS

To assist in developing applications for new desktop publishing technologies, we can look at a few recent product announcements that describe new uses of dense media. Disclosure, Inc., offers *LaserDisclosure,* an image-based system that distributes Securities and Exchange Commission (SEC) documents on CD-ROM. *LaserDisclosure* contains exact reproductions of the SEC documents, both text and graphics, which are displayed on a high-resolution monitor or output to high-quality printers. Available on a subscription basis with weekly updates, *LaserDisclosure* replaces collections of approximately 52,000 microfiche sheets with 100 CD-ROMs. Users can call up a disk index, view a document, select pages, and enlarge sections.

LaserDisclosure systems include a personal computer with a hard disk, a CD drive, high resolution monitor, keyboard and keypad, and either an ion deposition printer or a laser printer. Annual subscription prices vary, according to output needs, from $27,000 to $97,000.

Grolier has produced *The New Electronic Encyclopedia* on CD-ROM. It is based on their *Academic American Encyclopedia.* This first upgrade of the *Electronic Encyclopedia,* originally introduced in 1985, has a redesigned user interface with pull-down menus, full-screen text display, optional split-screen viewing of two articles simultaneously, and hypertext functions to allow rapid movement between any articles. Online Computer Systems of Germantown, Maryland, designers of such products as *BIP Plus, PAIS on CD-ROM,* and LC's *CDMARC,* created the search and retrieval software. The CD consists of a 10-million-word database with each word indexed and cross-references included. Users can employ Boolean operators to call up a list of all the titles of articles whose text satisfies the search statement. Selected information may be printed or downloaded to disk for subsequent inclusion in word-processing documents. Product requirements are an IBM PC or compatible, 512K RAM, DOS 3.0 or higher, and a CD-ROM drive. The list price of the disk is $395, with upgrades available to owners of Version 1.0 for $100.

Another recent encyclopedia announcement is from Pergamon Compact Solution, which has produced the *International Encyclopedia of Education* on CD-ROM. Running on IBM PCs or compatibles, the *Encyclopedia* is searched using the Graphic Knowledge Retrieval System, which employs a mouse for all user commands with the exception of keying in specific words for searching. Figures and illustrations are displayed with the text, and access is provided to cross-referenced items. Screen contents may be printed.

As a final note, there are other applications that could be of particular interest to the budding writer/publisher in all of us: Bowker Electronic Publisher is distributing Microsoft Corporation's *Microsoft Bookshelf,* a CD-ROM reference collection for the writer, retailing at $295. *Bookshelf* can reside permanently in a computer's memory, allowing the user to move quickly between it and other applications, such as word processing. With just a few keystrokes, one has access to the *American Heritage Dictionary, Roget's II: Electronic Thesaurus, The World Almanac and Book of Facts, Bartlett's Familiar Quotations, The Chicago Manual of Style, Houghton Mifflin Spelling Verifier and Corrector, Forms and Letters, U.S. Zip Code Directory, Houghton Mifflin Usage Alert,* and *Business Information Sources.* Knowing that such a wealth of reference sources is nearby may mitigate against that moment when—scanners, lexicons and disks aside—silence descends as we stare at the ol' blank screen.

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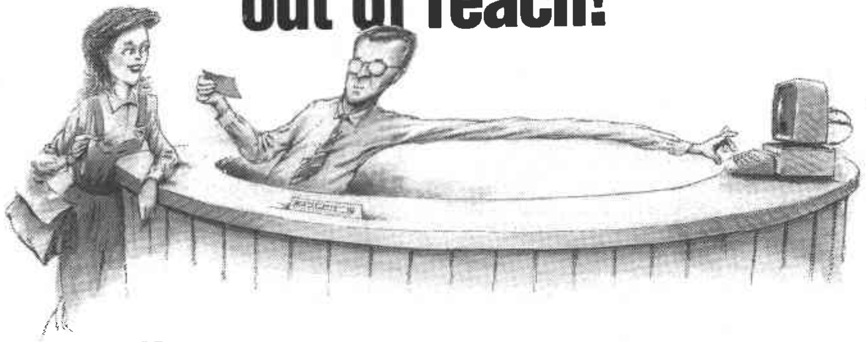

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Book Reviews

Richard D. Johnson, Editor

Annual Review of Information Science and Technology 85
Essential Guide to the Library IBM PC. Volume II: Acquisitions Systems for Libraries 96
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What Is User Friendly? Clinic on Library Applications of Data Processing: 1986 87
Women in LC's Terms: A Thesaurus of Library of Congress Subject Headings Relating to Women 86

Annual Review of Information Science and Technology. V.22. Ed. by Martha E. Williams. New York: Elsevier, 1987. 437p. $69.50 (ISBN 0-444-70302-2; ISSN 0066-4200). LC 66-25096.

The latest volume of the *Annual Review of Information Science and Technology* (ARIST) is the first to be published by Elsevier. Following the master plan for this series, it contains three broad sections: Planning Information Systems and Services, Basic Techniques and Technologies, and Applications. Some of the previous volumes have added special sections or a section on the profession.

The chapters in this volume are of the high quality that we have come to expect from ARIST, especially under the editorship of Martha Williams. The introductions to each section do a marvelous job of capturing the essentials of each chapter. ARIST is so solid and so well edited that, unless one is in a revisionist mood, there is little for a reviewer to do but list the chapters and mention which are more excellent than the others.

The first section, Planning Information Systems and Services, consists of one chapter, ''Economics of Information'' by Aatto J. Repo. This is a readable summary of an important but neglected area.

The second section, Basic Technologies and Techniques, features a superior chapter on artificial intelligence by Linda C. Smith. This is an update to a chapter she did in the 1980 volume of ARIST. She defines the terms used in artificial intelligence, details points of intersection with information retrieval, and discusses specific applications of expert systems to libraries, including cataloging and reference work.

A chapter on statistical methods in information science—a first for ARIST—is an outstanding review article offering sound advice on choosing the right method for a particular problem.

The second section is rounded out with chapters on natural language processing, retrieval techniques, and the management of electronic image information.

The third section, Applications, will perhaps be the most interesting to librarians. The chapter on agricultural information systems may seem rather narrow in focus, but it can also be read as a case study with application to other fields. "End User Searching of Bibliographic Databases," by William H. Mischo and Jounghyoun Lee, is notable for its recognition of the importance of the online catalog and the role it can play beyond traditional catalog functions.

The most practical and yet provocative chapter in this volume is "Systems that Inform: Emerging Trends in Library Automation and Network Development" by Ward Shaw and Patricia B. Culkin. They see in recent developments in library automation a means for the library to move beyond a neutral role as a collector and repository of information to become an active provider of services that are valued and respected.

The only criticism one might have of this book is the price, which, at $69.50, represents a substantial increase over the previous year. Also, the quality of the binding is suspect. This reviewer knocked the book off a desk and was surprised at the damage inflicted on the hinges of the case.

However, the content is excellent. This book has much to offer all librarians and it deserves to be read.—*William Gray Potter, Arizona State University, Tempe.*

Women in LC's Terms: A Thesaurus of Library of Congress Subject Headings Relating to Women. By Ruth Dickstein, Victoria A. Mills, and Ellen J. Waite. Phoenix, Ariz.: Oryx, 1988. 221p. $28.50 (ISBN 0-89774-444-6). LC 87-34766.

Women in LC's Terms: A Thesaurus of Library of Congress Subject Headings Relating to Women contains more than 3,500 subject headings and "see" references used by the Library of Congress (LC) for women and women's issues. In the introduction, the authors define their criteria for selection of terms and provide examples of the types of headings included, as well as those excluded. The volume is intended to assist researchers using catalogs that employ the LC subject vocabulary and librarians cataloging women's studies materials, and it fulfills this purpose by providing direct access to relevant headings in *Library of Congress Subject Headings (LCSH).*

Experienced researchers and librarians, familiar with the conventions of *LCSH*, will be best served by the thesaurus, since one must refer back to those volumes to find any scope notes or broader term (xx)/related term (sa) links associated with a heading. This interdependence with *LCSH* is clearly stated in the introductory notes. Another important reason for cross-checking is that most of the headings were selected from the 1983 microfiche update of *LCSH*, ninth edition. Although they have been supplemented by headings beginning with the word "women" from the tenth edition and by terms meeting the criteria for selection from LC's *Cataloging Service Bulletin*, no.24–33, new or more current forms could be missed without this additional step. The introduction to *Women in LC Terms* also includes a description of how pattern headings and subdivisions are represented in the volume; however, usres, particularly catalogers establishing headings, will need to look again to *LCSH* or other resources for a more complete explanation of these conventions.

The overall organization of the text is effectively designed to lead users concerned with a particular aspect of the topic to the most appropriate headings. Chapter 1 is an alphabetical list of the headings and "see" references. Additional "see" references have been created by the authors when deemed necessary. Chapters 2–12 regroup the headings into such broad subject areas as "Economics and Employment" and "Health and Biological Sciences."

The subject areas correspond to the arrangement found in another important text of women's studies terms, *A Women's Thesaurus*, which contains non-LC headings. This device should be quite helpful to researchers working with a variety of indexes.

Each of the subject-oriented chapters begins with an explanatory note on the appropriate usage of the headings and a list of the applicable free-floating subdivisions, providing more direction for the researcher or librarian. *Women in LC's Terms* also contains five appendixes, listing subdivisions and LC call numbers assigned to women and topics relating to women.

Women in LC's Terms is a specialized tool that requires a certain degree of sophistication of its users. For those individuals who are knowledgeable in women's studies or in subject cataloging, this guide will be quite beneficial in guiding their research.—*Melissa A. Laning, University of Louisville, Kentucky.*

What Is User Friendly? Clinic on Library Applications of Data Processing: 1986. Ed. by F. W. Lancaster. Urbana-Champaign, Ill.: Graduate School of Library and Information Science, Univ. of Illinois at Urbana-Champaign, 1987. 121p. $15 (ISBN 0-87845-072-6; ISSN 0069-4789).

Readers who do not already know the answer to the question "What is user friendly?" will probably still be wondering when they finish reading this book. These papers, originally presented at the 1986 Clinic on Library Applications of Data Processing, do a reasonably good job of addressing the concept of user friendliness, especially as it applies to automated library functions; nonetheless, the many considerations themselves work against there being a clear-cut consensus on what is meant by the term, much less whether libraries have achieved a desirable level of it.

Given the current steamroller pace of library automation that is likely to include most people, anyone interested in examining the various aspects of "user friendly" systems would be well advised to take a look at this book. What it lacks in terms of clear or consistent definitions it makes up by covering various issues, including microcomputers' potential as an alternative to stand-alone and integrated library systems; the role of microcomputers in automatic translation for online information retrieval systems; efforts to build user friendly integrated library systems; the psychological underpinnings of the user friendly concept; semantic barriers to achieving user friendly systems; aspects of user interfaces in online catalogs; developments in natural language processing that are likely to have an impact on systems in the future; and an assessment of where we are now as far as user friendly technology is concerned.

Like most proceedings, the papers tend to be uneven: a couple are really outstanding, another couple might be considered marginal, and at least one is downright user *hostile* (i.e., loaded with the kind of technical jargon that most of the papers suggest eschewing). Among the more appealing of these papers are Emily Fayen's "User Interfaces for Online Library Catalogs," which offers some logical do's and don'ts as well as suggested topics for additional research (these should be noted by those now beginning to use CD-ROMs and online catalogs in reference); Christine L. Borgman's "Toward a Definition of User Friendly: A Psychological Perspective," which reviews the mental, information-processing, and individual differences models and their applicability; and David Tolliver's "Design Issues," a succinct analysis of the functions automated translation programs must perform.

Librarians currently engaged in implementing automated library systems will want to purchase this book, as will those responsible for building library science collections.—*Richard P. Jasper, University of Michigan, Ann Arbor.*

Library and Archival Disaster: Preparedness and Recovery. Produced by BiblioPrep Films. Chicago: American Library Assn., 1988. 21-minute video plus 17-page workbook (VHS, Beta, 3/4"). $125 (ISBN 0-8389-2084-5).

This videotape, copyrighted in 1986, is the same tape previously issued by BiblioTech. The accompanying workbook, coauthored by Richard F. Young and David J. Tinsley, has been slightly revised.

The emphasis is on prevention of and planning for fire and water emergencies. Salvage techniques for wet paper and film are demonstrated briefly, along with important illustrations of what not to do. The presentation is clear and accurate but not comprehensive. Viewers are referred to consultants for more information.

The videotape is professionally produced, with quality picture and sound, but the format is essentially an illustrated lecture. The dramatic potential of the medium, therefore, is not fully realized. Simulated disaster situations and more demonstrations of recovery techniques would have been more valuable and interesting than the stilted background action that accompanies reading of the script.

The typescript manual/workbook is easy for any size and type of library to use in producing a workable disaster plan. Lists of supplies and contacts make it a practical reference tool, although a bibliography would have made it even more useful.

The major revisions in the manual are in the "Resources," section, which lists companies and consultants who can provide emergency services. Addresses and phone numbers have been updated, and a few names have been added or deleted. Other revisions are minor grammatical changes.

The tape could be used as part of a disaster preparedness training program in conjunction with a live demonstration of recovery techniques. it should not be the sole source of information for someone actually trying to cope with an emergency.

This is an expensive package for the amount of information it contains. The same material could just as effectively and much more cheaply been offered in book format. Recommended for comprehensive preservation collections. Others are referred to the many books and articles on disaster planning in the library literature.—*Martha Hanscom, University of Wyoming, Laramie.*

Remote Access to Online Catalogs in ARL Libraries. Systems and Procedures Exchange Center, Kit #142. Washington, D.C.: Office of Management Studies, Association of Research Libraries, 1988. 166p. paper, $29 + $5 postage (ISSN 0160-3582).

Here we have a state-of-the-art glimpse of the remote access facilities of fifty-four ARL libraries, culled from their responses to a survey. The authors define remote access as availability to online catalogs of terminals or microcomputers with modems and thereby exclude hard-wired terminals and dedicated lease lines. The book begins with the survey instrument, summarizes its findings in percentages, and lists the participating libraries. Then, using materials supplied by the libraries, the book is divided into three major sections: materials for instruction of remote access users, materials to assist in using remote access facilities, and materials related to remote access management. The book concludes with a selected reading list on remote access.

No library's methods and materials for remote access emerge as the stellar model for remote access programs. Confronted with this barrage of information in graphs, charts, tables, outlines, and questionnaires, the reader must determine its relative usefulness from the standpoint of his or her expectations for remote access. The survey instrument highlights the most vital concerns of remote access with questions on communication speed, hours of availability, length of sessions, extent of remote access use, and statistical reports generated by remote access use. User assistance programs supplied by twelve universities detailing their dial-in log-on procedures, required software, communication parameters, and trouble-shooting hints present many varied approaches to the creation of user assistance materials. The formats for user input in the management section, including sample menus from Michigan State and user suggestions from the State University of New York at Albany, more logically belong in a section other than management. North Carolina State's well-organized proposal for remote access stipulating early determination of lines available, types of lines, and estimated number of ports illustrates the thorough planning required for these proposals.

It is not stimulating reading, of course, but the volume does what it purports to do: charts the course for libraries planning their own remote access programs from the planning through the implementation and upgrading stages.—*Robert T. Ivey, Memphis State University, Tennessee.*

Hebraica Cataloging: A Guide to ALA/LC Romanization and Descriptive Cataloging. Prepared by Paul Maher, Washington, D.C.: Cataloging Distribution Service, Library of Congress, 1987. 72p. paper, $15 (ISBN 0-8444-0567-1). LC 87-600162.

Prepared as an LC in-house training manual, this slim paperback performs a heroic service in bringing order to the descriptive cataloging of the most unruly and most difficult to catalog corner of modern publishing: Hebraica (materials in Hebrew script) and especially its huge subset Judaica (materials on religious subjects). Problems connected with romanization, non-Gregorian dating, and the idiosyncrasies of Hebrew and Yiddish personal nomenclature are familiar to all catalogers of these materials—problems too specialized to be addressed, in most cases, by the *Anglo-American Cataloguing Rules* and *Library of Congress Rule Interpre-*

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tations. Maher's work provides convenient access to microinterpretations followed by LC in dealing with the most vexing of these problems. In reading this handbook, catalogers of Hebraica will often find that their own interpretations of the rules in question differ from LC practice, and they may even wish to challenge some of LC's solutions as Maher outlines them. They will, however share this reviewer's gratitude for the publication of a wide-ranging and careful presentation of LC's answers to questions faced continually by all who deal with Hebraica.

As a practical manual, the book will be most valuable to catalogers who contribute to automated bibiliographic databases. Among questions of interpretation addressed here, perhaps the most relevant concern abbreviations; recording of imprint data, especially publication, printing, and copyright dates; and the organization of multivolume commentaries on sacred or legal texts. Catalogers have wasted countless hours floundering over treatment of such problems, finding their own solutions in cases where the rules and rule interpretations give insufficient guidance. Owing to the clustering principles employed in automated databases, these varying treatments often result in a proliferation of records for identical bibliographic items, burdening the networks while confusing and frustrating searchers. In the absence of cataloging standards such as those provided by Maher's work, the goal of a unique descriptive cataloging record for every bibliographic item cannot be achieved. By presenting a workable and comprehensible standard, even if that standard is less than ideal in all its details, *Hebraica Cataloging* brings catalogers of materials in Hebrew many steps nearer to sharing consistent descriptive practices.

One of the most valuable features of the book, for those who wish their cataloging to conform to LC's at all possible points, is its bibliography of reference materials that LC considers authoritative. Another bonus is the fact that even Maher's driest passages on the history of internal procedures, though they contain little to interest catalogers outside LC, sometimes shed a welcome light on hitherto mysterious LC practices.

Many passages in the text of this manual, however, would be more helpful if they were further clarified. In the sections on authority work particularly, amplification is required. Because much of the most useful information in the volume is presented in the form of comments on rule interpretations, a more detailed table of contents or an index would make the material easier to use. Maher expresses the hope that future editions of *Hebraica Cataloging* will contain expansions and revisions; all catalogers who benefit from this first version will look forward to further enlightenment.—*Joan C. Biella, Princeton University, New Jersey.*

The Nature of Information. By Paul Young. New York: Praeger, 1987. 192p. $32.85 (ISBN 0-275-92698-2). LC 87-6953.

This is not a book that would have been reviewed in this journal in the past. Although it is about the nature of information, neither library nor information science are mentioned even once in the text. By reading it, however, one may better understand today's fascination with a widely used concept of information.

Of interest to librarians is Young's premise that information is an essential component in any theoretical model explaining chemical, electrical, and mechanical systems, its presence or absence determining any change in living matter. In the study of psychobiology and neurosciences, information is viewed as mental activities that, through electrochemical changes in nerve cells, influence everything from cognition to emotion.

One of the purposes of the book is to "discover a mind-body connection grounded in scientific thought instead of primal myth" (p.xi). By viewing the universe as an all-inclusive mass-energy system, Young hopes to free the understanding of mind from metaphysical speculations about it.

In this model the universe is seen as a self-organizing, self-regulating system; everything in it is either an object (i.e., a form) or a process (i.e., energy). Form is a shape, a structure, of anything in the world, while energy is a capacity to change forms. Information is described as a formative principle present in any interaction between mass-energy systems, "imbuing" form to objects. By stimulating changes within the structure of any system, it creates wavelike effects, which, in turn, communicate changes to the components of that system. The flow itself is a duplication of forms resulting from mass-energy systems resonating with one another, generating new patterns of energy and information, and thus creating new meaning.

Mind is described as an umbrella term covering all inner experiences of living organisms such as sensations, perceptions, feelings, volitions, and consciousness. Each experience is encoded in a brain in a shape of forms, together providing a holistic cognition of the total mass-energy systems acquired by each individual. However, since no one person can ever experience total reality, her or his perception of it is, in effect, an illusion.

The theme of this book is of value to writers in the philosophy of librarianship, who study information from metaphysical and empirical viewpoints. The former focus on information as nonphysical concepts (ideas); the latter side with scientific interpretations of information as mechanistic processes or items processes (physical data), similar to Young's definition of this phenomenon in mass-energy terms.

The form dependency of contemporary scientific theories raised the significance of information to the status of indispensable yet undefined force, which together with equally abstract concepts of energy and electricity shapes everything. Young's book reflects this trend. Similarly, new university interdisciplinary programs in information science are being developed on the proposition that information is the content of not only brain processes but also its product—the electronic, print, and nonprint physical records. Such programs encompass practically all disciplines from artificial intelligence to zoology, shifting the focus of subject matter from a preoccupation with information content and meaning to a study of decision making and information management. The interest in these programs is primarily in a study of information as behavior-changing processes and their practical applications. On the other hand, librarianship focuses on understanding behavior-driven needs for information and its provision to individual patrons; both approaches view information in the context of a scientific explanation of its biophysical nature. In this sense, Young's book ought to be of interest to library educators, researchers, and theoreticians and is recommended to all academic and larger public libraries.—*Joseph Z. Nitecki, State University of New York at Albany.*

The Smaller Academic Library: A Management Handbook. Ed. by Gerard B. McCabe. The Greenwood Management Collection. Westport, Conn.: Greenwood, 1988. 380p. $49.95 (ISBN 0-313-25027-8; ISSN 0894-2986). LC 87-23655.

McCabe has compiled *The Smaller Academic Library* as a handbook for librarians who "work or plan to work in . . . academic libraries that serve institutions with average enrollments ranging from a few hundred to about 7,500 students." He has arranged thirty chapters into seven categories: general administration, personnel, budgets and finance, collections, user programs and services, technical services, and physical plant. Most contributors have supplied references for further reading, and the final chapter, "The Smaller

Academic Library,'' is a bibliographic essay. Of the thirty-six authors, thirty-three are from smaller academic libraries, but only eight are women.

It is difficult to meet an objective of providing information to both practicing and future librarians because of differences in experience. This handbook, therefore, will be useful to librarians who hope to join small academic libraries or to librarians already in them who seek basic discussions of areas outside their expertise. There are exceptions, such as Fred M. Heath's chapter, ''Administrative Styles,'' a succinct summary of relevant organizational administration literature that will be of value to all librarians. As in many multiauthored works, style and tone are uneven and the content overlaps, especially concerning budgets, collection management, personnel, and user education.

Although the topics covered should concern academic librarians, of particular interest to librarians who hope to specialize in technical services are chapters about archives, automation, bibliographic control, booksellers, budgets, collection management, facilities, integrating services, networking, and periodicals. Susan Grigg's chapter, ''Archives Administration,'' is an especially good overview. Missing from this handbook are in-depth treatments of materials preservation issues, with which all academic librarians must cope, and an emphasis on developing procedures for protecting collections in emergencies.

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The Smaller Academic Library provides basic discussions about many topics of current interest that may be read individually or sequentially. Librarians should purchase it as a handbook for reference in small academic libraries and for library school collections. The paper used in the book complies with the ANSI/NISO Permanent Paper Standard (Z39.48–1984).—*Charlotta C. Hensley, University of Colorado, Boulder.*

Tapping the Government Grapevine: The User-Friendly Guide to U.S. Government Information Sources. By Judith Schiek Robinson. Phoenix, Ariz.: Oryx, 1988. 193p. $36 (ISBN 0-89774-179-X); paper, $24.50 (ISBN 0-89774-520-5). LC 87-28215.

When I first began reading *Tapping the Government Grapevine,* I was surprised and amazed to find that a volume dealing with government information sources could be interesting and readable.

Chapters focus on the Government Printing Office, depository libraries, regulations, judicial information sources, etc. In addition to these well-written chapters, Robinson provides the reader with excellent introductory chapters and special sections on such current topics as accessing information the government may have filed about yourself and nonprint and primary source materials available from government agencies. The final two chapters on foreign and international documents and administering government document collections are contributed by other authors. Robinson concludes each chapter with "Freebies": sources for free information/publications about the topic; addresses and telephone numbers of organizations, publishers, and government agencies mentioned in the text; and reference and further reading.

The section I found most interesting focused on access to government information, including a discussion of the Freedom of Information Act and the Privacy Act, two topics covered only peripherally in other texts such as Morehead's *Introduction to United States Public Documents* or Nakata's *From Press to People,* both now out-of-print. The chapter on patents, trademarks, and copyrights was fascinating, illustrated with historical and more contemporary patent and trademark cases ranging from Luther Burbank's patent for a new variety of peach to the patent for the board game Monopoly to the registered trademarks for the Morton salt umbrella girl and the *Ghostbusters* logo.

The discussion of seven common problems associated with overcoming barriers to documents should be required reading for all librarians. Robinson contends that access to an already complex system of government information is further complicated by such "barriers" as the lack of comprehensive listings of publications in card catalogs (or online systems), lack of visibility, and the library's own ambiguity about whether to place documents in separate collections, integrate them, or a little of both—all affecting search strategies for librarians and patrons.

This volume is loaded with illustrations, charts, diagrams, and summary tables—all easy to interpret and handy for quick reference needs. After reading the book, I agree that Robinson's approach is, in fact, "user friendly." A recommended purchase for classroom use, for ready-reference needs, or for reading and browsing as professional literature.—*Margie Epple, Rutgers University, New Brunswick, New Jersey.*

Preservation Planning Project Study Team Final Report. Pittsburgh, Pa.: Univ. of Pittsburgh Libraries, 1987. 98p. OMS Publication No.PP14, Nov. 1987. paper, $15 plus $5 postage. Available from the Office of Management Studies, Association of Research Libraries, 1527 New Hampshire Ave. NW, Washington, D.C. 20036.

The Office of Management Studies (OMS) of the Association of Research Libraries (ARL) is a source of library information that I think is not used enough by most librarians. A main component of the strength of their work is the directed self-study, a technique OMS has advocated and fine-tuned to address many library problems: the Preservation Planning Program (PPP) was begun in 1981 using this approach for the topic of preservation. Since that time, fourteen institutions undertaking PPP have made their final project reports available through OMS. One recent report, from the University of Pittsburgh Libraries, was finished in November, 1987. Based on the PPP plan, the final report includes background study material and recommendations of the thirty-five staff members working in five major areas of concern: collections conditions, environmental conditions, organization and procedures, resource/instruction, and disaster (response) planning. The original charge from the library director forming the study group, reproduced in the report, included some assumptions that would delineate the planning of a preservation effort during the fourteen months of work. These guidelines were seemingly very restrictive but typical of real situations; they represent the kind of hard reality from which it is sometimes difficult to develop new programs. These assumptions include the following: "Overall budget is to remain about the same. . . . Environmental conditions in existing facilities to remain the same. . . . Total staff growth will be limited . . . [and] will depend on existing staff for a preservation program effort." From this begin-

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ning, careful recommendations that will work well with both the collections and organizational restraints, as well as being in the realm of possibility, have been developed. One and one-half pages of executive summary followed by three pages of recommendations—in priority order for implementation over the coming five years in the five areas of concern—are included in the recommendation section of the final report. For anyone just embarking on preservation planning, the PPP in general is a useful tool, and the final reports from institutions completing the program, including this report from Pittsburgh, are useful reading. For the comprehensive preservation reader, the reports are interesting for the variety of approaches recommended for relatively the same basic problems.—*Ann Swartzell, The New York State Library, Albany.*

Preservation of Library Materials: Conference Held at the National Library of Austria, Vienna, April 7–10, 1986. Sponsored by the Conference of Directors of National Libraries in cooperation with IFLA and Unesco. Ed. by Merrily A. Smith. IFLA Publications, 40, 41. New York: K. G. Saur, 1987. 2v. $70 (ISBN 3-598-21770-6, 3-598-21771-4, V.2). ISSN 0344-6891.

Occasionally, conferences become milestone events. Even if no direct action may be attributed to the meeting, it becomes a reference point for many future years. It seems that this conference and, subsequently, its published papers will go this way, becoming solid references for any number of discussions for years to come. The meeting, held at the National Library of Austria in Vienna by the Conference of Directors of National Libraries in April 1986, provided recognition of the worldwide importance and interest in preservation; it also marked the beginning of the IFLA (International Federation of Library Associations) International Core Programme for Preservation and Conservation (PAC), with special host initiatives from the Library of Congress, the Bibliotheque Nationale, and the Deutsche Bucherei.

The two volumes of conference papers include eight major subject area groupings, each headed by a useful abstract and followed by summaries in both German and French. For U.S. preservation specialists, the international scope and the directions indicated are interesting as a source of new outlooks: treatment/retention of newspapers, mechanization of restoration procedures, approaches and goals to training, and the continuing discussion of definition of the terms *conservation, preservation,* and *restoration.* Regarding the latter, it should be noted that, thankfully, no single paper was devoted to defining terms, and most speakers merely included their definition in introductory remarks; this was a neat way of sharing the information and not letting details fo semantics cloud the discussion.

William Welch, LC, gives an overview of worldwide preservation policy, with specific examples from the United Kingdom, Japan, India, and the Gambia, bringing to mind several new perspectives. The most interesting new perspective toward planning for preservation, the second subject area, was that from Michael Roper, U.K., on "Policy for Format Conversion." Warren Haas and Richard McCoy, RLG, presented solid outlines of the elements of a national preservation program, including recent research library activities and goals in preservation that were similar to other articles in U.S. library literature; while a presentation by Lourdes Blanco (director, Centro de Conservacion, Biblioteca Nacional, Venezuela) offered new views of conservation. Although outsiders might view South American countries, or even Spanish-language libraries, as similar-enough to allow cooperation, the case is made that, without common background assumptions, there cannot be common goals, which are necessary for success (or perhaps even establishment) of regional conservation facilities.

Other general topics included in the two volumes are new technologies, policy and training, reproduction, storage and handling, and treatment and environment. Presentations ranged from an onslaught of detailed facts (such as insect identifications in "Integrated Pest Management") to more general overviews of how things *should* be done right. Closing remarks by Rutherford Rogers (former director of Yale University Libraries) summarize as succinctly as possible the material covered in the entire conference; also included in the closing is the paper, "Recommendations of the Conference," which presents an agenda for international action by the library community.

For the record, it should be noted that the title pages of the volumes do not indicate adherence to the ANSI permanent paper standard or describe the quality of the paper; this international plan for preservation should then last approximately 50 years. Read the plans and ideas now, and pass them on.—*Ann Swartzell, The New York State Library, Albany.*

Essential Guide to the Library IBM PC. Volume 11: Acquisitions Systems for Libraries. By Norman Desmarais. Westport, Conn.: Meckler, 1988. 246p. paper, $29.95 (ISBN 0-88736-185-4; 0-88736-080-7, set). LC 85-10535.

One must give Norman Desmarais credit for the tremendous amount of information he has gathered about ten library acquisitions systems that run on IBM personal computers. He presents this information by first describing in general the functions any acquisitions system should be expected to perform, then by describing, in detail, each of the ten systems in a chapter of its own, followed by a "Conspectus" chapter in which the ten systems are discussed together in terms of their common features. Also included are a brief chapter on systems designed to perform electronic ordering from book vendors and an even briefer concluding chapter speculating on future developments.

The problem with this book is that in order to get anything out of it you have to read it.

Of course, one would not ordinarily criticize a book for this reason, but in this case the information contained in the book is probably much better suited for presentation in tabular form than in narrative form. As a matter of fact, the last three pages of the "Conspectus" chapter (in my opinion, the most valuable three pages in the book) consist of a table listing the ten systems across the top and the features desirable in acquisitions systems enumerated down the left margin. Under each system name, an *x* appears whenever that system provides the feature on the left. This table effectively summarizes the preceding 234 pages of text.

What is missing in both the table and the text is valuable, qualitative information that would aid the reader in evaluating the systems described in the book. Of course it is impossible to describe each system with the detail that Desmarais uses without giving the patient reader some idea of the value of the system, but again the reader must plow through all that prose in the process. While the author deserves praise for not editorializing, a more evaluative approach (as opposed to an almost exclusively descriptive approach) would have served at least this reader better.—*David T. Buxton, University of Arizona, Tucson.*

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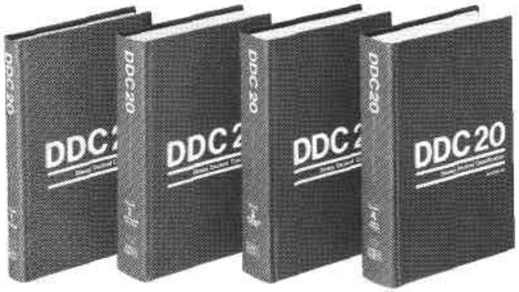

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